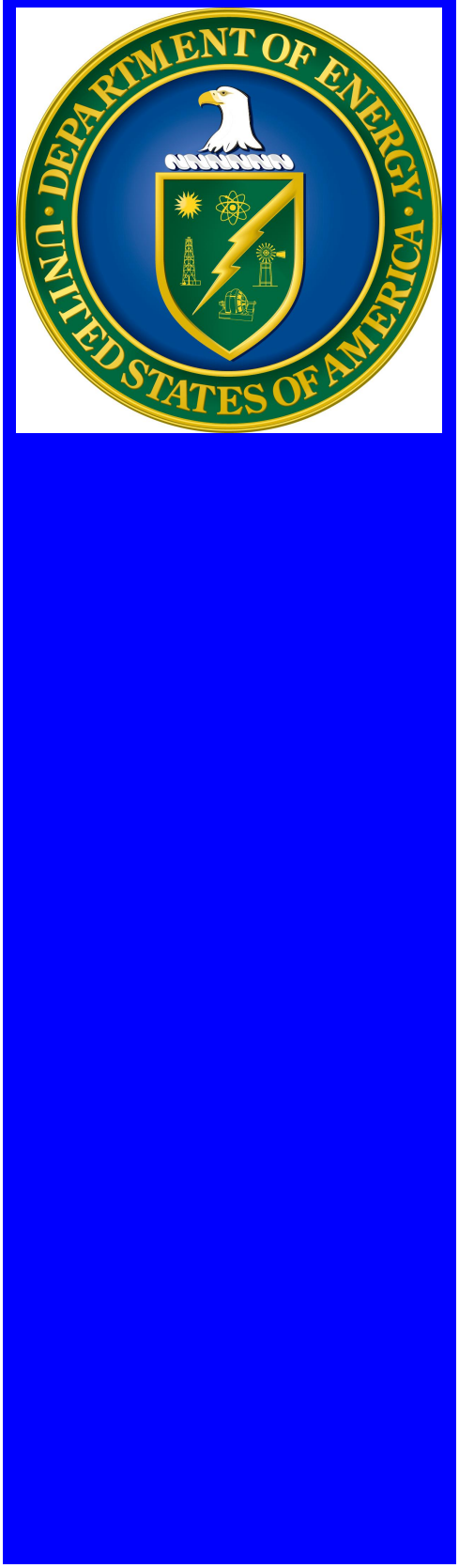

U.S. Department of Energy

Guide to IT Capital Planning and Investment Control (CPIC)

September 2009

Office of the Chief Information Officer

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1.0 PREFACE

This document has been prepared by the U.S. Department of Energy (DOE) Office of the Chief Information Officer (OCIO) to document the Department's Capital Planning and Investment Control (CPIC) process for information technology (IT) and provide Department-wide guidance. Consistent with the Office of Management and Budget's (OMB) Circular A-130, the Department's IT CPIC process is an iterative process with inputs coming from across the Department and the outputs feeding into the budget and investment control processes.

Purpose

The IT CPIC Guide's purpose is to:

- Establish the policies and responsibilities for performing IT CPIC processes throughout the Department;
- Serve as the IT management guide for the execution of IT CPIC;
- Demonstrate how the integrated and iterative departmental CPIC process aligns and operates with other departmental processes;
- Clarify IT management nuances within the Department's other capital asset management processes; and
- Document the Department's IT CPIC process.

This Guide will be updated annually to include any new internal and/or external process changes and to reflect CPIC maturity.

Scope

The IT CPIC Guide's scope addresses all major and non-major IT investments.

2.0 INTRODUCTION

2.1 Capital Planning and Investment Control Overview

As defined by OMB Circular A-11, signed June 26, 2008, "Capital planning and investment control means the same as capital programming and is a decision-making process for ensuring IT investments integrate strategic planning, budgeting, procurement, and the management of IT in support of agency missions and business needs. The term comes from the Clinger-Cohen Act of 1996 and generally is used in relationship to IT management issues."

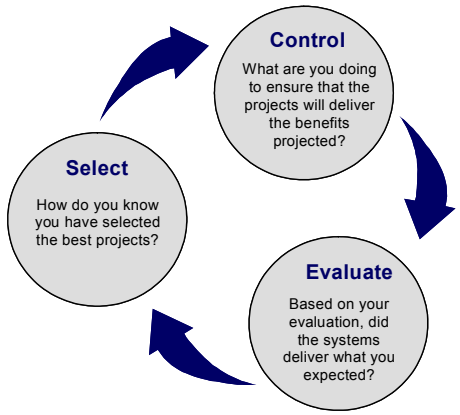
CPIC consists of the following three phases:

Select The process the Department uses to determine priorities and make decisions about which initiatives (new and ongoing) they will fund and include in the IT portfolio.

Control An ongoing management process designed to monitor the progress of initiatives against projected cost, schedule, performance, and expected mission benefits. The Control Phase helps to ensure each investment is properly managed.

Evaluate Once initiatives are fully implemented, actual versus expected results are evaluated to (1) assess the initiative's impact on strategic performance, (2) identify any changes or modifications to the initiative that may be needed, and (3) revise the investment management processes based on lessons learned, self-assessments and benchmarking.

Figure 1– Phases of the CPIC Process



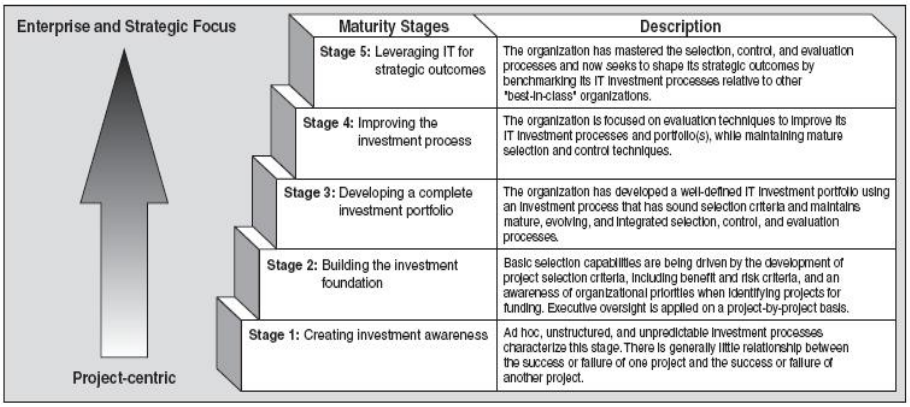
There are various legislative and regulatory drivers for implementing CPIC. Many legislative reforms emphasize the need for federal agencies to significantly improve how they plan, select, fund, control, and evaluate IT initiatives. The Clinger-Cohen Act requires federal agencies to focus on the results achieved through IT initiatives while concurrently streamlining their IT acquisition process. It also mandates that agency heads implement a process for maximizing the value of IT initiatives, assess and manage the risks of IT acquisitions, and quantitatively benchmark the performance of IT activities against comparable processes and organizations in the public or private sector.

To provide agencies with specific guidance on implementing the Clinger-Cohen Act, OMB regularly revises Circular A-130, *Management of Federal Information Resources*. The revisions apply to the sections of A-130 concerning information systems and IT management. It requires agencies to follow the provisions of the Clinger-Cohen Act and OMB Circular A-11, which involve the acquisition, use, and disposal of IT as a capital asset.

The Government Accountability Office (GAO), also in response to the Clinger-Cohen Act, developed the Information Technology Investment Management (ITIM) Process Maturity Framework. The purpose of the framework is to identify critical processes for successful IT investment and management and organize these processes into a framework of increasingly mature levels. GAO's ITIM framework provides a comprehensive model for evaluating and

assessing an organization's CPIC process and helps identify specific areas for improvement. An overview of the framework is provided in Figure 2 below.

Figure 2– GAO ITIM Stages of Maturity



Source: GAO.

A mature CPIC process yields numerous benefits to investment managers, key stakeholders, and program and departmental executives. Benefits include:

- Increased capability to achieve mission and business objectives
- Clear alignment of proposed initiatives with IT strategic goals and objectives, as specified in an Information Resources Management (IRM) Strategic Plan
- Support and integration with Enterprise Architecture (EA) efforts
- Forum for measuring performance and net benefits for dollars invested
- Framework to balance potential benefits against costs and risk
- Protocol for setting IT priorities and making appropriate IT resource shifts based on priorities

2.2 DOE CPIC Process Overview

The DOE CPIC is a structured process, which encompasses the submission of all IT investment information to the OCIO for evaluation and resultant recommendation to the Corporate Review Budget (CRB) Board for inclusion, or continued inclusion, in the Department's IT investment portfolio and budget submissions.

The Department is required to submit Capital Asset Plans (Exhibit 300s) for all major IT investments. OMB and the Department have defined major IT investments, including large infrastructure investments, as those that meet any of the following criteria:[1]

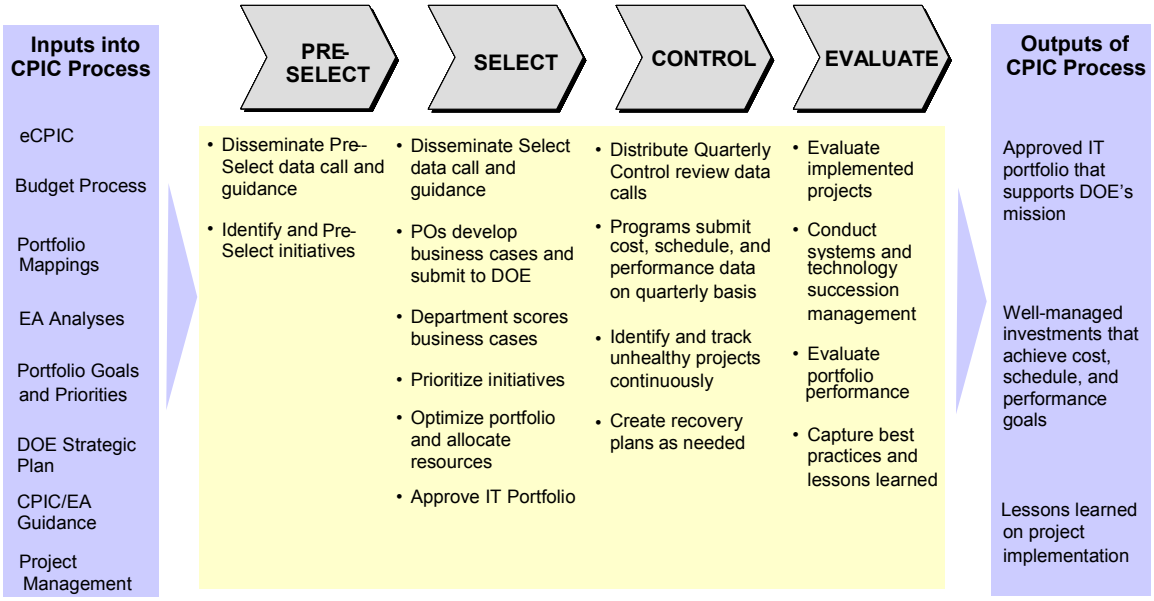
- Total Project Cost (TPC) of $5 million or more [i.e., cumulative development/modernization/enhancement (D/M/E) funding across all fiscal years (all past, current, and all future) of the project];

[1]U.S. Department of Energy, *Information Technology (IT) Reporting Format and Requirements for BY 2011 Budget Submission, May 2009*, (Based on OMB Circular A-11, Sections 53 and 300, "Information Technology and E-Government")

- Any investment with cumulative steady state or mixed life cycle funding of $5 million or more across the Prior Year (PY), the Current Year (CY), and the Budget Year (BY);
- A financial system with an estimated investment cost of $500 thousand or more in one year;
- OMB directed portfolio IT investments (e.g., Infrastructure and Grants Management);
- Requires special management attention because of its importance to the agency mission;
- Has high development, operating, or maintenance costs, high risk or high return;
- Plays a significant role in the administration of agency programs, finances, property, or other resources.

The evolving CPIC process at the Department of Energy includes Pre-select activities as well as Select, Control, and Evaluate phases, as shown in Figure 3.

Figure 3– DOE CPIC Process



Pre-Select Phase

The Pre-Select Phase provides a process to assess proposed IT solutions for unmet business requirements. It also allows for a governance process methodology to ensure that proposed IT investments support the agency strategic plan and mission needs as well as provide initial information to further support investments. It is during this phase that the business/mission need is identified and relationships to the Department and/or agency strategic planning efforts are established. There are significant information requirements and a potential expenditure of funds in the preliminary planning phase to prepare for review and selection of IT investments. The Pre-Select Phase provides an opportunity to focus efforts and further the development of the initiative's concept. It also allows project teams to begin the process of defining business requirements and associated system performance metrics, benefits, and costs, as well as subsequent completion of a business case and initial project planning efforts in preparation for inclusion in the Department's investment portfolio. Currently, pre-select activities occur in the

program and staff offices where the offices determine which initiatives will be considered for inclusion in the Department's portfolio before submission to the OCIO.

DOE's Select Phase is closely integrated with the budget process and is detailed in section 2.4 of this document. Control Phase processes have been implemented within the Department and occur on a quarterly basis. The Evaluate Phase is beginning to mature at the program office and department levels. The Department finalized FY 2007 guidance for conducting Post Implementation Reviews as part of the Evaluate Phase in June 2007.

Numerous inputs feed into the DOE CPIC process, including legislative guidance, Enterprise Architecture (EA) analyses, the Department's investment management methodology, as well as portfolio goals. IT initiative information is maintained in the Department's Electronic Capital Planning and Investment Control portfolio management tool, e-CPIC.

The outputs of the DOE CPIC process are an approved IT portfolio that best supports the Department, ongoing monitoring and evaluation of initiatives, and lessons learned that can be fed back into the management of investments and the CPIC process.

DOE's Select, Control, and Evaluate Phases are detailed in sections 3.0 – 5.0 of this document. A summary of the phases is provided below.

Select Phase

The purpose of the Select Phase is to assess the costs and benefits of all proposed investments and to select the optimal portfolio of IT investments. The Select Phase is focused on the development and selection of an IT portfolio that supports the DOE EA and meets the mission and strategic goals of the Department. Investments are reviewed to evaluate whether or not there is a potential duplication of an initiative or existing DOE system application. Individual investments are evaluated in terms of technical alignment with other IT systems and other cost, schedule, performance, benefit, and risk criteria. In this phase, the Department prioritizes the IT initiatives, makes decisions about which projects will be funded, and establishes project Control Review schedules.

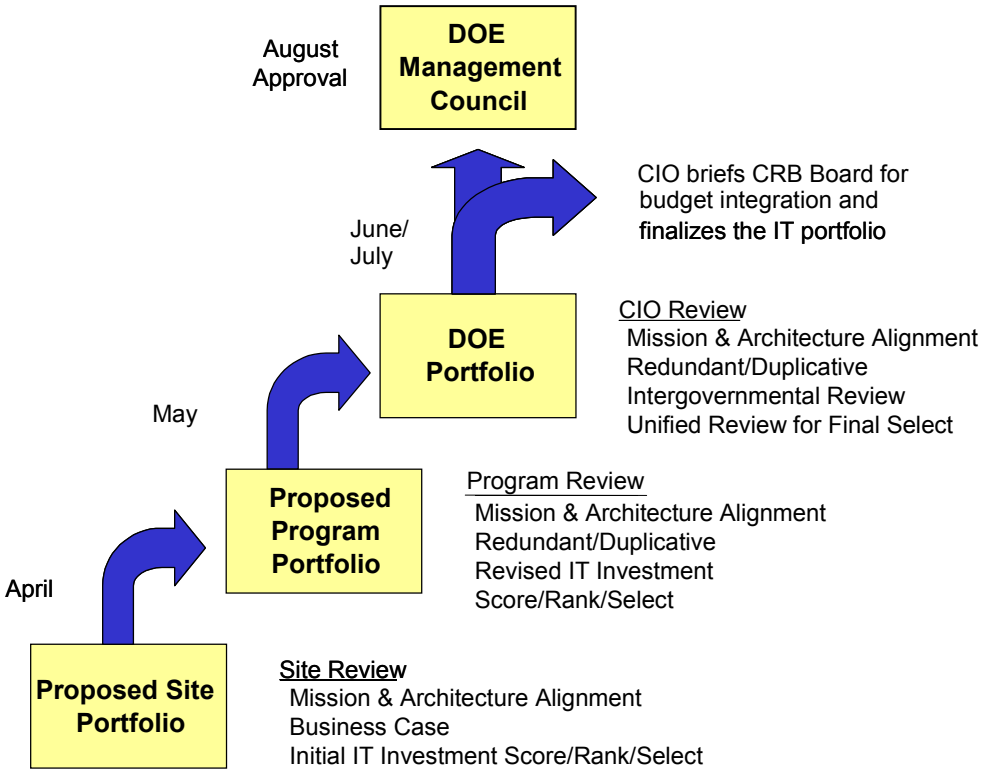
Key factors in selecting an IT initiative for inclusion in the IT portfolio include:

- Does the initiative and portfolio reflect the Department's strategic goals, objectives, and priorities?
- Have potential funding constraints been identified and considered?
- What is the expected return on investment (ROI) for the initiative?
- Have the ramifications of declining to fund certain initiatives been given careful consideration?
- Have all opportunities to invest in crosscutting initiatives been appropriately evaluated?
- Does the project conflict, overlap with, or is it redundant with other projects?
- Are the project owners capable of successfully executing the chosen IT portfolio (i.e., are the appropriate resources available to complete the included initiatives)?
- Have work processes been simplified or redesigned to reduce costs and improve effectiveness?

- Does the initiative make maximum use of commercial-off-the-shelf (COTS) software?
- Has the investment been decomposed into well-defined useful segments or modules?

The current process for the development and selection of the annual IT portfolio is illustrated in Figure 4. Program and staff offices are responsible for evaluating target performance outcomes and reviewing all proposed investments to ensure that the IT portfolio is consistent with the program budget submission. IT investments are selected for the portfolio based on defined selection criteria consistent with the requirements of OMB Circulars A-11 and A-130, and DOE Order 413.3. A sample list of selection criteria to used by program and staff offices in making funding decisions is provided in Appendix E. Proposed IT portfolios are then forwarded to Headquarters with budget request data and incorporated into the Department-wide IT portfolio. Pursuant to an internal review and scoring for each IT investment business case by the OCIO, a portfolio analysis is performed as part of the Corporate Review Budget process. The CRB Board makes budget decisions, the Information Technology Council (ITC) reviews and makes recommendations on the portfolio, and the final IT portfolio is presented to the DOE Management Council for final approval.

Figure 4 - Annual IT Portfolio Selection Process



Control Phase

The purpose of the Control Phase is to ensure, through timely oversight, quality control, and executive review that IT initiatives are conducted in a disciplined, well-managed, and consistent manner within the DOE. This process enables the effective management of the Department's IT investments. The Control Review sets in place a structured process to provide senior management with accurate information that will allow them to make timely decisions.

All major IT investments are subject to OCIO Quarterly Control Reviews. Quarterly Control Reviews include a review of earned value management system (EVMS) data where applicable and performance management data for investments not subject to EVMS requirements. IT investments not performing according to expectations (i.e., investments with cost or schedule variances that exceed 10%, or performance shortfalls that do not meet 90% of goals) are subject to additional detailed reviews, managerial corrective actions, and/or termination. In addition, all investments must report on project management qualification requirements, as required by the Federal OCIO Council guidance, and the certification and accreditation status of the investment. This review assesses the performance of major IT investments ensuring compliance with both external and internal regulations and guidance.

Evaluate Phase

The purpose of the Evaluate Phase is to examine whether an IT investment has met its intended objectives and yielded expected benefits as projected in the business case. A Post Implementation Review (PIR) is performed on IT systems six to eighteen months after they are fully deployed. This review is important not only to determine the future viability of the IT investment, but also to assist IT managers in improving IT proposal business case requirements to better inform future IT selection decision-making.

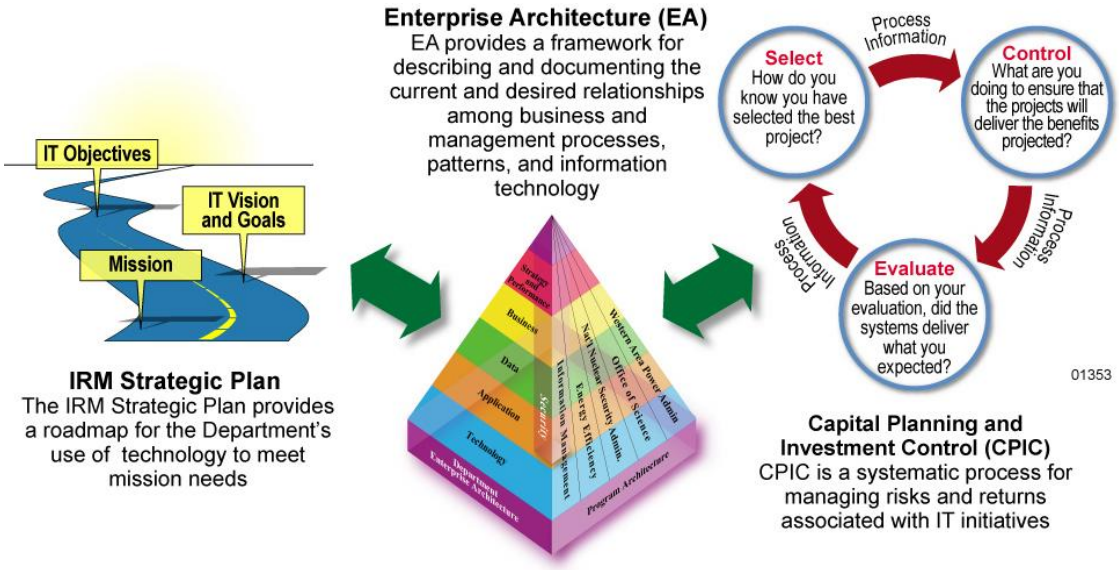
Another component of DOE's Evaluate Phase is an operational analysis. The operational analysis serves as the method for examining the current performance of an investment and measuring that performance against an established set of cost, schedule and performance parameters. The Operational Analysis Guidance is outlined in Appendix D. DOE policy requires program offices to conduct an operational analysis of steady state investments and investments with operational components at least annually. The results of the operational analysis are reported via the Operational Analysis and Exhibit 300 submissions, and are validated by the OCIO and IT Council. As noted in GAO's *Assessing Risks and Returns: A Guide for Evaluating Federal Agencies' IT Investment Decision-Making*, "the Evaluate Phase 'closes the loop' of the IT investment management process by comparing actual against estimates in order to assess the performance and identify areas where decision-making can be improved."

The Evaluate Phase also assesses the Capital Planning process to ensure that the desired outcomes for IT investment management are achieved. This process includes a formal benchmarking mechanism whereby the DOE CPIC process is assessed against the GAO ITIM framework and improvement recommendations are developed. In addition, ad hoc benchmarking against governmental and private sector organizations are performed as necessary.

2.3 DOE CPIC Integration with Other IT Investment Management Processes

In addition to CPIC, IRM strategic planning efforts and DOE's EA form an integrated Strategic Business Management (SBM) framework aimed at effectively managing the Department's portfolio. The figure below describes how the three processes integrate at a high level at DOE.

Figure 5 – Strategic Business Management Framework



The IRM Strategic Plan provides DOE a description of how IRM activities help accomplish agency missions, and ensures that IRM decisions are integrated with organizational planning, budget, and program decisions. This allows the OCIO to articulate and champion a shared vision and corporate perspective for Departmental IRM activities.

As a companion to IRM strategic planning, DOE developed an EA framework that leverages both strategic and operational IRM planning activities to identify target opportunities. By utilizing its EA, DOE can analyze the number of investments supporting a line of business or sub-function and make recommendations that can result in long-term savings and increased efficiencies. The EA is also aligned with the annual budget cycle and provides updates that further define the baseline and target architectures based on decisions made in the IT CPIC process.

EA Integration with CPIC Processes

DOE is continuing to integrate EA with CPIC, standardize investment assessment/prioritization, develop segment architectures, and deliver more centralized portfolio management analyses and support. As part of the Select process, DOE is working to expand the current evaluation criteria to more fully incorporate EA as a significant, decision-making component of this process. Additionally, the EA and CPIC teams are revising the IT governance process to reflect the role of EA in the Select phase of DOE's IT portfolio management process. The Select Phase enables the DOE to integrate IT management decisions with organizational, planning, budget, financial management, human resources management, and program decisions. It also integrates initiatives with the Department's EA and ensures that security management processes are consistent with strategic and operational planning processes. In doing so, it ensures that the Department funds IT initiatives that best support mission needs, minimizes risk to the Department, and provides the greatest return on investment to the user community. The Select Phase occurs annually as part of the budget formulation process.

During the Control Phase, investments are monitored throughout their system development life cycle, starting from the detailed requirements and functional design stage through the system implementation and customer acceptance stages. Schedules, costs, and changes in system requirements are monitored and managed. This phase also focuses on how well the

investment's technology aligns with the enterprise technology architecture. These assessments compare the final design specifications of the investment to the higher level and common design components of the Agency's EA (i.e., the data, applications, and technology architecture subcomponents of the EA). The phase begins as soon as the proper information from an investment or system is available. Since most design documentation does not begin until funding is approved, and since most final design documentation is not completed until the first step in the Control Phase of the CPIC process, the technical alignment and assessment of an investment against the agency's EA is most often conducted during the Control Phase of the CPIC process. The TRM security facets and standards identified earlier are important components in this assessment.

The Evaluate Phase examines whether an IT investment is continuing to meet its intended objectives and yielding expected benefits. The Evaluate Phase helps identify lessons learned and fosters integration of data from its EA and CPIC processes.

The DOE Operational Analysis process, part of the Evaluate phase, involves the use of data from the following EA and CPIC domains: 1) end user and investment beneficiary PIR information ; 2) actual cost data maintained in the Department's financial management system(s); 3) baseline requirements, cost, schedule, and risk records archived by the investment's project, business, and contract managers; 4) benefit accumulation and program/system end–of-life projections from the programs' analysis of alternatives; 5) physical performance, maintenance and help desk records maintained by system/mechanical engineers and technical support staff; and 6) feedback and recommendations from the Enterprise Architecture Working Group (EAWG) and the Architecture Review Board (ARB).

Each Agency must identify certain points in the CPIC Evaluate Phase where reviews can be conducted. In other words, at certain points in the system life cycle, it is common for new information regarding a substantive change to potentially impact an investment's EA alignment and assessment rating or its compliance with the architecture. These points in the EA compliance assessment process vary with the particular system life cycle methodology used, so each Agency should determine potential points of vulnerability in the process. Formal reviews must be instituted to review documentation and system development in progress at these points.

The Evaluate Phase comes after the system is accepted by the customer and is placed into production for an initial period of time. The intent is to identify and document lessons learned not only about the system/investment in question, but about the entire CPIC process. The PIR compares performance promised in the initial proposal, business case, and requirements to actual performance of the system in production. The PIR Evaluation Criteria is outlined in Appendix C. The second action is an evaluation of the ROI to validate estimated costs and benefits. Results of this evaluation determine the recommendation for continuation, modification, or, in rare cases, cancellation of the system. Finally, process improvements or architectural changes required are captured and documented. The following sample questions, while not exhaustive, are typical of those commonly answered during these actions.

- Did the technology/system use follow the prescribed standards?
- Was the technology/system sufficiently interoperable with the infrastructure?
- Were improvements in process time, cycle time, or other expected process/time-saving enhancements realized?
- Has the availability of data for new purposes been explored?

- Is the system mapped to a segment architecture, and does this mapping reflect the appropriate business drivers?

In the past, the DOE investment evaluation has primarily focused on the business value assessment. Additionally, the degree to which an investment supports the Department's goals and objectives is assessed. The development and implementation of a more integrated approach is the focus of the SBM framework. This involves the expansion of the strategic component to ensure a straight "line of sight" for investment contribution to the Department's overall goals and objectives as well as a more robust EA component through the implementation of a vulnerabilities assessment.

The integration of EA with CPIC processes through the implementation of the SBM framework will yield:

- Rapid identification of appropriate IT investment goals
- Improved business-IT alignment and conformance to the Federal Enterprise Architecture Framework (FEAF)
- Access to integrated strategic, budget and IT information that will provide a better "line of sight" and approach for decisions that affect the direction of the Department
- Development of a more standardized system of prioritization to support the decision-making process
- Appropriate allocation of resources to the best portfolio of investments ensuring the achievement of those goals
- Enabling project initiators to search for duplicative technology, which will eliminate duplicative investments in resources and funding

Program and Project Management for the Acquisition of Capital Assets Integration

The Department aligns the IT CPIC process with DOE Order 413.3[2] requirements, which govern acquisition and project management direction for all capital assets. This alignment combines budget, acquisition and asset development (Order 413), and life cycle management of IT capital assets (CPIC), thereby creating a process to manage assets that deliver results on schedule and within budget.

The integration between the two capital asset processes reduces reporting burdens, streamlines requirements, and provides clear roles and responsibilities. This integration provides project managers with reduced work processes that can achieve modest economies of scale through reduced reporting time. For instance, the integration reduces reporting burdens through having IT projects report EVMS and project status information into one tool, the Project Assessment and Reporting System (PARS), once a month versus two separate EVMS reporting tools and requirements. The integration further streamlines capital asset requirements for topic areas such as risk, alternatives analysis, baseline validations, EVMS, mission need statements, and more. Lastly, the integration clarifies and reduces redundant roles and responsibilities for project managers, the OCIO, Office of Engineering and Construction Management (OECM), senior management, integrated project teams and others.

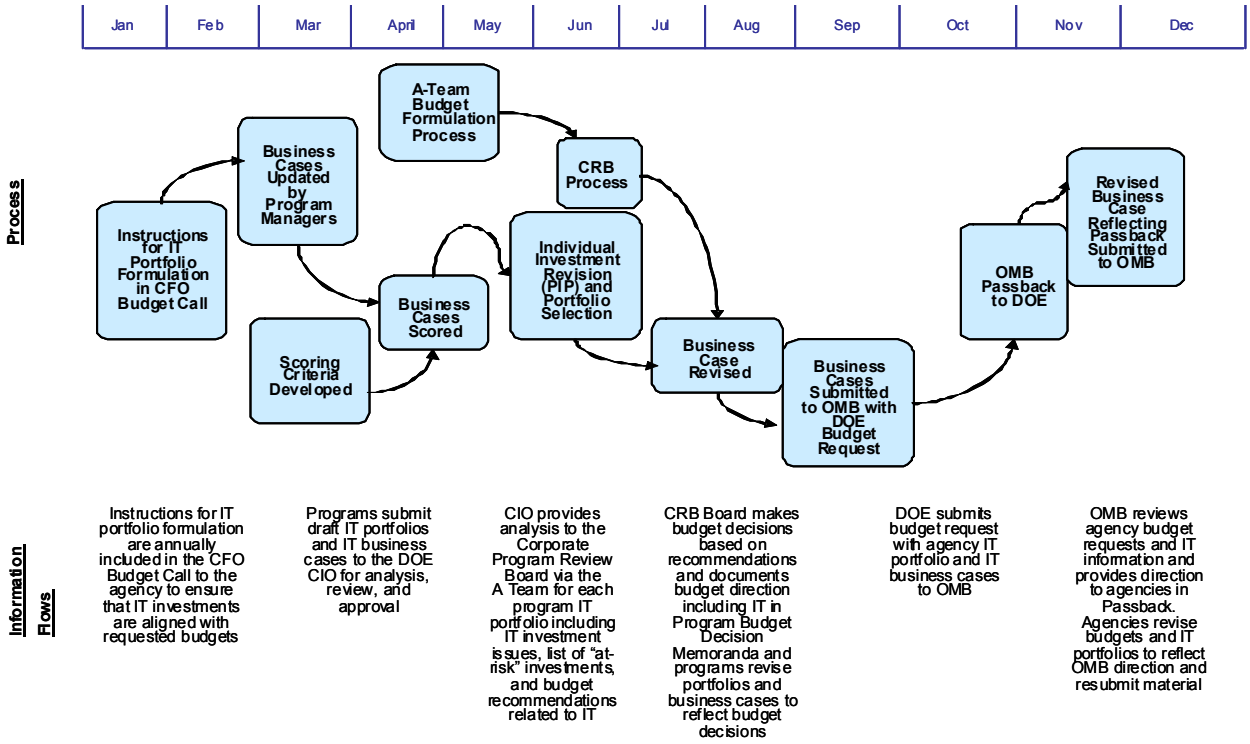
[2] DOE Order 413.3, Program and Project Management for the Acquisition of Capital Assets. dated 07/28/2006 http://www.directives.doe.gov/pdfs/doe/doetext/neword/413/o4133ac1.pdf

To further the integration, the Department continues to develop an IT Project Guide for DOE Order 413.3 to provide federal project directors, the IT project managers, integrated project teams, program managers, program offices, and acquisition executives with additional guidance on complying with Order 413 requirements. The guide addresses the acquisition of IT capital assets and the management of IT projects and programs.

2.4 DOE CPIC Integration with DOE Budget Process

CPIC's iterative processes are integrated with the Department's annual budget process. The two processes and how they operate together are illustrated in Figure 6 below.

Figure 6 – CPIC and Budget Process Integration



The process flow also demonstrates how the OCIO remains an active participant throughout the annual budget process in establishing investment priorities for agency information resources. Beginning in January, through the DOE Budget Call, the OCIO provides instructions for IT portfolio formulation to the program and staff offices. Based on this instruction, the program and staff elements submit their business cases to the OCIO for compliance analysis review and approval. The analysis, budget recommendations, and an investment "at-risk" list are then provided to the Department's CRB Board via the A Team for inclusion in the Department's budget. The CRB Board makes budget decisions as documented in Program Budget Decision Memoranda (PBD). It is also through the CRB process where the OCIO directly advises the Deputy Secretary on budgetary implications of information resource decisions. Based on those decisions the program and staff offices revise their portfolios and respective business cases. The final budget requests are submitted to OMB for consideration. Towards the end of the calendar year, OMB reviews the budget requests and provides direction in the Passback. The OCIO participates in the Passback through helping program and staff elements revise their

business cases based on OMB direction. Budgets and portfolios are then updated to reflect this direction.

2.5 DOE CPIC Roles and Responsibilities

Listed below are the IT investment roles and responsibilities of those currently involved in the Department's CPIC process: IT Project/Program Managers; IT Capital Planning and Architecture Division; A Team; CRB; and the Management Council. Detailed responsibilities are provided in the following sections of this guide.

IT Project/Program Managers: IT Project/Program Managers are responsible for the oversight and execution of IT investments. They will be the initiators of the investments and responsible for overseeing the activities of the development and support staff (internal or external service providers).

IT Project/Program Managers
• Ensure that IT initiatives align with the Department's EA
• Initiate Pre-Select and Select documentation
• Manage the initiative throughout its life cycle
• Participate in quarterly control reviews as required
• Oversee the initiative's progress, including cost, schedule, and performance
• Ensure the use of the System Development Life Cycle (SDLC) project management methodology
• Develop required SDLC documentation and submit accordingly
• Report on the initiative's progress at each life cycle milestone
• Prepare progress and status reports as requested
• Document lessons learned once projects are implemented
• Participate in PIRs
• Perform ongoing operational analysis consistent with the life cycle

OCIO IT Capital Planning and Architecture Division: The OCIO IT Capital Planning and Architecture Division of the Office of IT Planning, Architecture, and E-Government consists of an interdisciplinary team (e.g., Financial Analysts, Technical Analysts, and Business Functional Analysts) formed to support day-to-day IT planning and management operations under the purview of the CIO. The IT Capital Planning and Architecture Division provides CPIC related guidance and support to program and staff offices and the Department's CRB Board.

OCIO IT Capital Planning and Architecture Division
• Ensure evaluation of completed investments against original requirements, compliance with EA, and security policies and regulations • Receive and review investment business case summaries against pre-determined criteria to determine whether they meet minimum viability and investment characteristic requirements. *(The division reviews investment business case summaries and assesses architectural compliance, redundancies, and opportunities for collaboration. It works with project managers when additional information and clarification is needed).* • Ensure that IT initiatives address accessibility requirements stipulated by Federal Acquisition Regulations and Section 508 • Analyze DOE's IT portfolio semi-annually and report results to CIO • Meet with project managers to review status and recommend corrective action as warranted • Actively seek to identify "at risk" investments, act to mitigate risks or correct problem areas, and present significant issues to the CRB Board for consideration • Monitor major IT investments for progress against projected cost, schedule, and performance goals • Prepare recommendations for the continuation, modification, or cancellation of funding for investments • Report investments with cost and/or schedule overruns greater than ten percent and/or performance shortfalls exceeding ten percent of goals to the IT Council • Create user guides for Control Reviews and PIRs • Review evaluations of implemented investments to identify lessons learned • Vet lessons learned to the CPIC user community to ensure that all lessons learned have been captured and addressed • Oversee the preparation of documents identified in the Department's CPIC Process Guide • Perform annual CPIC review process and benchmark against ITIM • Provide recommendations and support materials on IT investments to A Team • Perform Strategic Portfolio Review (SPR) analysis • Develop IT management policies and directives

Analysis Team (A Team): The A Team reviews and makes recommendations concerning budget decisions to the CRB Board. An IT representative serves on the A Team to ensure that IT issues are adequately addressed.

A Team
Provide analysis and recommendations to the CRB Board on IT investments, as well as other budgetary items.

Corporate Program Review Board: The CRB Board is responsible for determining the Department's budget submission. They review all capital assets for inclusion in the budget, including IT investments. The CIO and CFO serve on the board, along with the Secretary, Deputy Secretary, Under Secretaries, and Assistant Secretaries from each of the major organizational elements.

Corporate Program Review Board
• Review program submissions and analysis from functional areas • Make budget decisions • Document budget direction in Program Budget Decision memoranda • Seek input on IT investments from A Team, CIO and the CFO

DOE Management Council - The DOE Management Council, a board of senior DOE executives, reviews and approves the proposed Department IT portfolio presented by the CIO.

Management Council
• Reviews and approves Department's IT portfolio

3.0 SELECT PHASE

3.1 Overview of Select Phase

The Select Phase of the IT investment management process determines priorities and makes decisions about which projects will be funded during the year. The goal of the Select Phase is to ensure that the Department's IT investment portfolio is comprised of the appropriate range of investments that will best support its mission and strategic goals.

The Department has an IT portfolio whose composition changes as investments are modified, added to, or deleted from the portfolio. An analysis of the existing portfolio of IT investments helps to ensure that senior managers are informed of current costs, benefits, and risks associated with the existing portfolio.

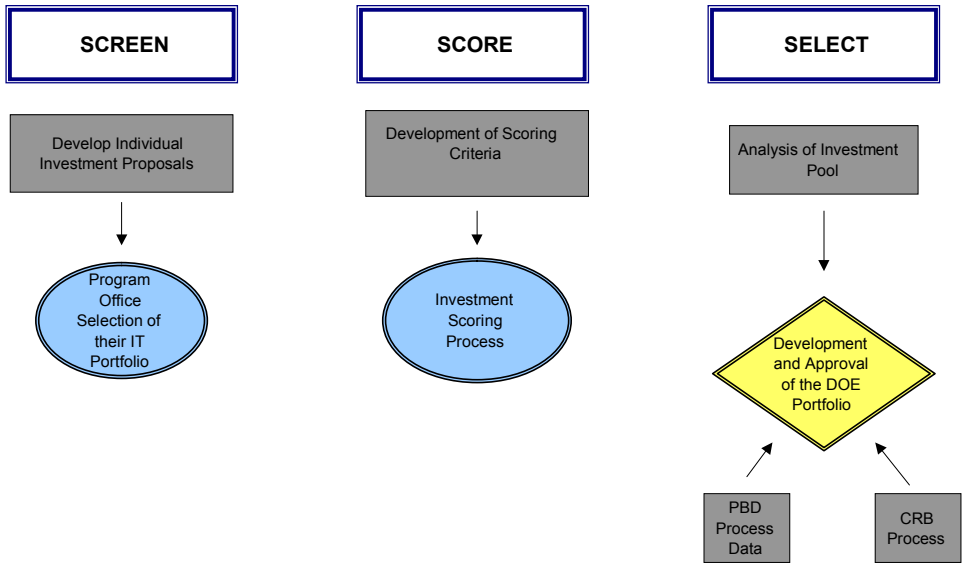
In the information that program offices submit to the OCIO, each IT initiative must document the business need for the investment. For each investment, the project manager must provide:

- How the initiative and portfolio reflect the Department's strategic goals, objectives, and priorities;
- A description of the initiative, the benefits to DOE if funding is provided, and the funding requested for development, equipment and maintenance for the entire life cycle of the investment;
- How the investment supports Secretarial priorities, Congressional mandates, and the Department's strategic goals and objectives;
- How the investment resolves GAO and Inspector General (IG) findings and material weaknesses;
- An alternatives analysis, including a cost-benefit analysis with risk-adjusted ROI and net present value (NPV) results;
- Initial project plan with estimated costs listed for each work package within the work breakdown structure (WBS);
- Performance measures that are tied to OMB's Performance Reference Model (PRM);
- How risks will be managed and security and privacy controls implemented; and
- How the investment conforms to the EA and other related information.

The Select process is supported and implemented through the Department's IT governance program and requires the participation and collaboration of all IT project/program managers with the program and staff offices, the OCIO, the OCFO, and executive-level decision making bodies. Within the DOE, the Select Process is closely tied to the budget process, and therefore, the OCIO and CFO are an integral part of the Select Phase.

There are three parts to the Select Phase: screen, score, and select (see figure 8). These are described in the paragraphs below.

Figure 8 - DOE Select Process



3.2 IT Investment Screening

A starting point for the Select Phase is the screening process, in which projects being submitted for funding are compared against a uniform set of screening criteria and thresholds in order to determine whether the projects meet minimal requirements and to identify at what organizational level the projects should be reviewed. The costs, benefits, and risks of all IT projects whether proposed, under development, or operational are then assessed and the projects are compared against each other and ranked or prioritized.

Site IT program managers review individual IT investment business cases and select investments for a proposed site portfolio to ensure that missions and goals are effectively and efficiently supported by the proposed portfolio and that the proposal is consistent with the site IT architecture. Individual IT investment business cases are reviewed to ensure that they are compliant with the requirements of OMB Circulars A-11 and A-130 and adequately justify the investment. The proposed site portfolio is sent to the appropriate Headquarters' program office for review and inclusion in a program-wide portfolio. The program office IT portfolios are merged with staff office IT portfolios to create the Department's proposed IT portfolio.

Program office IT project/program managers screen major IT initiatives before submitting business cases (or updated business cases for ongoing initiatives) to the OCIO for scoring and selection into the Department's IT investment portfolio. Major IT investments are required to submit complete Exhibit 300s. The documentation will be reviewed and scored for all major IT investments as part of the Department's Select process.

3.3 IT Investment Scoring

Following proposed investment submission by program offices, the OCIO reviews Exhibit 300 submissions consistent with criteria established and promulgated by OMB. It is reviewed for quality and content in accordance with OMB A-11.

The OCIO reviews, scores, and develops Performance Improvement Plans (PIPs) for each major IT investment business case. The PIPs contain detailed comments for improving each

section of the Exhibit 300. The OCIO uses an integrated project team of representatives from the IT Capital Planning and Architecture Division and the offices responsible for Enterprise Architecture, E-Government, cyber security, and privacy to perform the internal review.

3.4 IT Investment Selection

The final selection of major IT initiatives to be included in the Department's IT investment portfolio is based on information gathered and analyzed during the screening and scoring stages of the IT CPIC Select process. The OCIO analyzes and compares initiatives within and across the available IT investment opportunities. Business cases that receive an overall internal passing score based on the OMB Circular A-11 criteria will be tentatively included in the DOE IT portfolio pending further analysis and approval. Business cases that fail the structured review are returned with specific, detailed comments to the program office for correction. All business cases in the portfolio are then subject to further high-level analysis and review in several areas of special interest to the Department. This review and revision process is repeated until a final business case is accepted by the OCIO as a valid, viable business case.

The analyses take into account the relative operational, technical, financial, and institutional strengths and weaknesses of each initiative. The Department’s goal is to maintain a balanced IT investment portfolio that ensures for any given funding investment, the best return to Department mission and functions is obtained.

As part of the CRB process, a portfolio analysis is performed. The OCIO submits this analysis with budget recommendations and a list of “at-risk” investments (including major IT investments scored as unsuccessful by OMB and major and other IT investments identified internally by DOE as concerns) to the CRB Board. Program offices are required to submit proposed budgets including a variety of documents (e.g. Exhibits 300 and 53, budget justification documents, strategic plan/program plan) to the CRB Board. The CRB Board reviews program submissions and analysis from functional areas, including OCIO IT analysis, to make budget decisions.

Investments identified as “at-risk” during the CRB process are subject to budgetary action up to and including termination. The budget decisions resulting from the CRB process are documented in Program Budget Decision (PBD) Memoranda which are provided to program offices. PBD Memoranda provide specific direction to program offices on revisions to proposed budgets including IT investments. Based on that direction, the program and staff offices revise their respective budgets, business cases, and IT portfolios. At the conclusion of the CRB process, once the program offices have made all required revisions to the IT business cases and portfolios and the OCIO has reviewed the final submission, the draft consolidated DOE IT portfolio is presented by the CIO to the DOE Management Council for final approval. The final DOE IT portfolio is submitted to OMB for budget review in September of each fiscal year in accordance with OMB Circular A-11 guidance.

3.5 Select and eCPIC

All major Exhibit 300s and non-major Exhibit 53s are maintained, updated, and submitted using the eCPIC system. This allows the Department to maintain a repository of investment information. OMB only requires major IT investments to submit Exhibit 300s.

4.0 CONTROL PHASE

4.1 Overview of Control Phase

The Control Phase of CPIC begins once investments have been selected, budgeted, and have received funding. The Control Phase of the Department's IT CPIC process requires monitoring of on-going IT initiatives during the planning, acquisition, deployment and maintenance/operational phases of the IT investment life cycle. The primary objective of the Control Phase is to assess the performance of investments and enable the effective management of all major IT investments within the DOE. The Control Review sets in place a structured process to provide senior management with decision making information and to meet the goals and objectives that were established in the business cases submitted to OMB as part of the budget submission process.

The ability to adequately monitor IT initiatives relies heavily on outputs from effective investment execution and management activities. The Department has made significant strides in controlling its IT investments. The OCIO has issued a departmental mandate requiring that all major DOE IT investments be reviewed on a quarterly basis. Control Phase processes are continually updated to meet internal and external requirements. The OCIO employs eCPIC and Control Review templates to facilitate the Control Review process by allowing the program offices to manage, maintain, and provide shared access to initiative baselines, monitor changing business requirements, and track resource allocations. The OCIO also utilizes eCPIC and the Project Assessment and Reporting System PARS to collect, monitor, and analyze monthly EVM data and project status.

A qualified project manager is responsible for each major IT investment project. All DOE major IT investment project managers have a minimum project management qualification of level one, according to CIO Council requirements. In addition, the Department will work to certify all major investment project managers at the Senior/Expert level according to the Federal Acquisition Certification Program and Project Manager requirements.

The DOE CPIC Control Phase consists of four major steps as detailed below.

Step 1: Define evaluation criteria and develop scoring criteria and supporting forms/templates for Investment Control Reviews

The OCIO IT Capital Planning and Architecture Division has established control review scoring criteria to assess the performance and health of IT investments. All major IT investments are reviewed in the areas of project management qualification, cost variance, schedule variance, performance goals, and security. "Passing" scores have been defined for each performance area. In addition to evaluation and scoring criteria, the IT Capital Planning and Architecture Division has created IT investment review summary report templates to be completed by program offices for individual investments.

Step 2: Establish and Maintain Initiative Cost, Schedule, and Technical Baselines

The project manager has the responsibility for establishing project management and execution plans, procedures, and practices to support initiative monitoring activities. A mandate has been issued that all major DOE IT investments must be monitored. The project manager is also required to report to the OCIO and the IT Council on the status of the initiative's cost, schedule, and technical baselines each quarter. Baselines provide both the framework and sufficient

detail to assess the status of the initiative's major milestones, decisions, activities, and work products and deliverables. The project manager ensures that the project has been planned realistically.

The OMB requirements for appropriate project control include the implementation of an EVMS that meets ANSI/EIA-748 Standard. Earned value management provides an indication of how well an investment is meeting the cost and schedule goals defined prior to the outset of the investment. The determination of earned value begins with an estimate of the costs and schedule dates associated with completing investment work packages. Earned value is an assessment of the dollar value of the work actually accomplished based on the original cost estimates to complete the work. The earned value is compared to (1) the planned value, which is comprised of the original cost and schedule estimates, and (2) actual costs and completion dates to determine schedule and cost variances, respectively. The three major objectives of employing earned value are to provide:

- An effective internal cost and schedule management tool for use by project managers;
- Review bodies with a mechanism for evaluating initiative progress; and
- A means to identify potential problems throughout the life cycle in time to implement changes or corrective actions to ensure project objectives are met.

All IT initiatives must be planned, budgeted, and scheduled in measurable and phased "value-added" increments. Major IT investments with Total Project Costs over $20 million and that have over $5 million D/M/E funding in CY or BY are required to use an ANSI/EIA-748 Standard compliant EVMS (see Figure 9) and are to report EVMS data in PARS on a monthly basis.

Major IT investments with total investment costs between $5 and $20 million in the development phase have the option of using EVMS or another performance management system for management of the investment, but must also report monthly project status information through PARS. All major investments are subject to OCIO quarterly Control Reviews. Non-major IT investments with total investment costs below $5 million are reviewed and managed within the program offices, but are subject to Department-level review and reporting at the discretion of the OCIO.

Figure 9 – DOE Exhibit 300 and EVM Reporting Requirements

	Major IT Investment	
	Development, Modification or Enhancement (DME) Projects	**Mixed (D/M/E + SS) or 100% SS**
Total Estimated Costs *(Life-cycle)*	Any investment with cumulative DME measured across the lifecycle which is greater than $5M and has DME funding greater than $5M in the either the Current Year (CY) or Budget Year (BY through BY+n).	Any investment with a total cost (D/M/E + SS) cumulative expenditure greater than $5M measured across 3 fiscal years; the Prior Year (PY) + Current Year (CY) + Budget Year (BY).
Business Case (OMB Exhibit 300)	✔	✔
ANSI-748 Certified Earned Value Management System	*Required for the D/M/E portion where the lifecycle D/M/E is greater than $20M and D/M/E funding is greater than $5M in the either the Current Year (CY) or Budget Year (BY through BY+n)*	*N/A*
Performance Management System	*All other Major IT Investments not covered by ANSI STD 748 EVM shall have a Performance Management System which assesses cost and schedule performance*	

DOE requires that steady state investments and investments with operational components perform annual Operational Analyses. An Operational Analysis, as defined in the *OMB Capital Programming Guide* and *DOE OCIO Operational Analysis Guidance,* must be performed to demonstrate how close an investment is to achieving the expected cost, schedule and performance goals for operational efforts.

An Operational Analysis is the comparison of the performance of an IT asset or system to an established baseline. It primarily consists of tracking and identifying the operational cost and performance of assets in the steady state phase of their life cycle. At a minimum, performance measures should include 1) how well the asset supports its customers and stakeholders and 2) how well the asset is managed by the agency. The results of this analysis include recommendations to agency managers as to the asset's continued use, modification, or termination.

OMB requires that all operations and maintenance or steady state projects be reviewed at least annually to document the continued effectiveness in supporting mission requirements and minimize the cost of asset ownership. The cost of asset ownership is defined as the total of all costs incurred by the owners and users to obtain the benefits of a given project or investment. The intent, in part, is to reduce the number of stove piped legacy systems that are expensive to maintain. Operational Analysis results are reported to OMB each year in the Exhibit 300. A project manager may choose to perform an Operational Analysis more frequently. The annual Operational Analysis is a key practice within the GAO ITIM maturity model. Using verifiable data, the investment board must regularly review the performance of IT projects and systems against stated expectations. Investment boards use steady state projects' Operational Analyses to support the CPIC processes.

Maintenance and steady state investments must be monitored through the operational analysis process to track:

- How close actual annual operating and maintenance costs are to the original life-cycle estimates;
- Whether the level or quality of performance /capability meets performance goals; and
- Whether the system continues to meet mission and user needs.

Step 3: Review of Ongoing IT Investments

During the implementation/execution of the investment, the project managers conduct frequent reviews of their initiatives to assess progress against planned cost, schedule, and technical baselines. The primary purpose of these assessments is to ensure that the initiative is on track, and to identify issues or deficiencies that require corrective action. As part of this process, the project manager is responsible for reporting cost and schedule performance for the investment to the OCIO and the IT Council on a quarterly basis.

To help DOE's IT project managers meet this reporting requirement, a Control Review report template has been developed. Appendix B contains the Control Review report template, Control Review Get Well Plan template, Control Review Scoring Criteria, and Control Review Results Certification form. These templates provide project managers with standardized formats for reporting planned milestones as well as actual performance towards those milestones. The Control Review report template calculates the cost and schedule variances for the investments. Additionally, the report template goes beyond the tracking and reporting of variance, it also requires project managers to report on the status of the following areas: project manager qualification, performance goals, security, and earned value management.

The OCIO receives the completed reports and conducts a preliminary analysis on the data. The reports and the analysis are then provided to the IT Council for their review. The principal objectives of the IT Council's review are to:

- Determine whether investments under review continue to support mission and business functions;
- Assess the extent to which investments continue to meet planned cost, schedule, and technical baselines;
- Identify deficiencies and track the completion of corrective actions;
- Reach and document the decision for each investment to "continue-as-is" or be "modified" in order to improve its overall performance; and
- Score investments based on their status for the following six criteria: project management qualification, cost variance, schedule variance, performance goal variance, security, and earned value management.

IT initiatives that are performing within 10% of the planned cost and schedule baseline, which comply with project management and security guidance/policies, and are continuing to achieve their planned performance goals, are not likely to be subject to a high level of scrutiny. Greater scrutiny will be given to initiatives that lag behind, exceed the budget, do not meet security and project management guidance/policies, or fail to achieve their performance goals; these

investments are asked to submit their corrective actions via Get Well Plans. The IT Council reviews the status of each IT initiative, and hears from the program office representative who has the opportunity to present a briefing on the current status of the initiative.

Currently, the IT Council has the authority to recommend that investments either "continue-as-is" or the baseline milestones be "modified". The recommendation to "continue-as-is" will be issued whenever an investment is within the 10% tolerance range for cost, schedule, and performance goal variance percentages and satisfying existing guidance and policies. The recommendation to "modify" denotes two types of actions: (1) the re-scoping of cost and schedule; or (2) the implementation of corrective actions to address poor performing aspects of the investment.

In the event an investment continues to perform poorly over multiple review cycles, the IT Council may recommend to the OCIO that the investment be referred to the DOE Management Council for further review. The DOE Management Council is then responsible for taking the necessary action on the investment. These actions may include:

- **Accelerate:** External factors require the initiative to be completed sooner than expected or initiative resources are available that can enable an acceleration of initiative schedule.
- **Decelerate:** The initiative timetable or funding needs to be reduced in order to allow the initiative an opportunity to regain acceptable cost, schedule, and/or performance levels. Or, external factors, such as dependence on another initiative, require extending the investment life cycle.
- **Suspend:** It is not cost-effective to proceed with further development or ongoing activity until problems stemming from resource shortfalls, initiative performance, system dependencies, or other external issues are resolved. In addition, a realignment of Department priorities among existing IT initiatives may result in the suspension of an initiative.
- **Cancel:** The initiative is no longer required or there is a low probability that it will ever meet acceptable cost, schedule or performance levels.

Step 4: Identify and Prioritize Deficiencies for Corrective Action

Project managers develop strategies to address problems or issues related to their investments. For example, a project's risk may have increased substantially due to delays in technology that were needed to complete the investment. Thus, the investment's funding also may need to be increased, which might impact multiple areas, such as staffing, investment management, and other IT investments. The resolution of all issues will be documented and corrective actions tracked. Given approval of the plan, the initiative's project manager will coordinate the implementation and execution of the corrective actions. Typical corrective actions for major deficiencies are described below.

- **Eliminate or avoid** the specific deficiency, usually by selecting a corrective action that eliminates the cause. Corrective action to resolve deficiencies depends on the extent of change that would be required to the initiative's overall project plan, considering the cost (in terms of dollars and/or time) to make the change, and the calculated severity of the deficiency. As a general rule, elimination should be pursued when the deficiency cannot be managed, or the deficiency is costly to the initiative.

- **Reduce** the expected cost associated with the deficiency through corrective action. The option is employed when the elimination or avoidance of the deficiency is not likely. Instead, attention is focused on minimizing the consequences of the problem.
- **Accept** that a deficiency will occur and develop contingency plans to be executed should the deficiency occur. Contingency plans are pre-defined action steps to be taken prior to and if an identified deficiency should occur.

4.2 Control Reviews and eCPIC

The eCPIC application is used to facilitate the quarterly Control Review process between the OCIO and the Program Offices. The Control Review report template, outlined in Appendix B, is provided in the form of a Microsoft Excel file and is accessible for Program Office users to download and complete for their major IT investments. Once complete with quarterly information, the report is then re-submitted into the eCPIC application.

5.0 EVALUATE PHASE

5.1 Overview of Evaluate Phase

The Evaluate Phase includes two components, a Post Implementation Review (PIR) on implemented or cancelled investments and an annual analysis of the performance of the Department's CPIC process. These activities are essential to the contributions that IT investments make toward the accomplishment of the Department's strategic goals and objectives, as well as the ongoing improvement and increased maturity of the CPIC process. Once investments are fully implemented or cancelled, actual versus expected results are evaluated to (1) assess the investment's impact on strategic performance, (2) identify modifications that may be needed, and (3) revise the investment management process based on lessons learned.

5.2 Role of the Post Implementation Review

The purpose of a PIR is to track and measure the impact and outcomes of implemented or cancelled IT investments to ensure they meet the program mission. The need to evaluate a system's ability to effectively meet the organization's mission needs, both functionally and economically, does not end at system deployment. Rather, it is a continuous process to ensure that the system still supports both the end users and the mission needs of the organization. A PIR is typically conducted on implemented investments to: evaluate the actual results compared to estimates in terms of cost, schedule, performance, and mission outcomes; determine the causes of major differences between planned and end results; and to help improve project management practices.

The goals of a PIR could be summarized as follows:

- Inform the Department and key stakeholders of the investment's performance and contribution in support of strategic goals and objectives;
- Ascertain the degree of investment success, in particular, the extent to which it met its objectives, delivered planned levels of benefit, and addressed the specific requirements as originally defined;
- Ensure that the investment is meeting the mission support objectives;
- Examine the efficacy of all elements of the working business solution to see if further improvements can be made to optimize the benefit delivered;
- Learn lessons from this investment which can be used by the team members and by the organization to improve future investment work and solutions;
- Utilize PIR lessons learned to improve decision-making processes and to assess and improve the overall performance of the IT portfolio;
- Provide insight into the strengths and weaknesses of the processes and procedures performed in the Select and Control phases of the CPIC process;
- Re-assess an investment's business case, technical compliance, and compliance against the EA; and
- Update the EA and CPIC processes, as needed.

5.3 Post Implementation Review Process

5.3.1 Selection of Investment Review Candidates

The OCIO will identify the major IT investments that are at the appropriate stage of the life cycle for conducting PIRs. In an effort to ensure the proper and appropriate oversight of various types of investments including legacy investments, DOE will require the following types of investment reviews:

- **PIRs for Newly Implemented Investments:** All major investments that have been implemented within the last 6-18 months will be required to conduct a PIR. For investments that have multiple phases of development, this timeframe applies to each module as it is implemented.
- **Mixed Life Cycle Investments Transitioning to Steady State Investment Reviews:** The reporting requirements associated with many of the Department's management and oversight processes vary depending upon the life cycle stage of an investment. There is generally less stringent oversight, with regard to reporting requirements, when reporting on steady state investments. In an effort to standardize this transition process throughout the Department, any investment that becomes steady state will be required to conduct a review prior to being permitted to report as a steady state investment. This requirement will allow for more visibility as where investments are within their life cycle across the Department.

5.3.2 Evaluation Factors

To complete a PIR, comprehensive investment information must be gathered, analyzed and documented in a PIR Summary and Recommendations Report. Although the same factors will be used to assess all investments, the specific information that the investment is required to report will vary based on the type of review being conducted. Detailed requirements and the criteria by which the investment will be assessed for each type of review will be determined.

The following general investment elements should be reviewed:

1) Cost and Schedule: A system's performance can be viewed from two distinct yet related perspectives: the management of the investment's development and implementation, and the benefit that the system provides. Earned value analysis calculates investment cost and schedule variances. A detailed explanation should be provided for cost overruns of greater than 10%. ROI should be evaluated in terms of quality and benefits received from the investment. Where available, methods and data concerning estimation of cost and schedule should be gathered and analyzed.

Per DOE reporting requirements, investments with funding of $5M - $20M are given the option of using an ANSI standard compliant Earned Value Management System (EVMS); however, they must use an investment performance management system to report projected value and earned value to demonstrate cost, schedule and performance status. Investments with TPC funding of $20M and greater and D/M/E funding of $5M or more in CY or BY, are required to use a full ANSI standard compliant EVM system. If an investment requires a full ANSI standard compliant EVMS, but has not yet met ANSI

compliance requirements, it is still required to report actual cost and schedule performance against the baseline.

2) Technical and Operational Performance: A technical evaluation of an investment results in an analysis of the system's operational readiness. Technical performance indicators deal with system (hardware or software) performance. Common measurements such as processing cycles, response times, storage capabilities, etc., are intended to assess the processing capability and reliability of the IT system. While these measures are useful for system evaluation, one should also measure the impact of system performance to user and mission capability and predetermined program objectives.

Functional requirements are also an important assessment area because they define the system data and processing requirements of customers and users. These requirements represent the baseline specifications and determine the basis for development activities. The baseline requirements should be compared against the functionality of the implemented system to determine if the system was developed as originally defined. If not, then any changes need to be documented and explanations provided.

If a Requirements Traceability Matrix (RTM) or other applicable SDLC documentation has not been adequately updated or maintained for each of the phases, the evaluation team might attempt to trace the partial requirement mapping against system functionality. The evaluation team may be asked to perform an independent requirements traceability review to determine not only if requirements were adequately documented and tested, but that the stated requirements also were successfully implemented. The evaluation team should identify any requirements not traceable through the implementation phase in the PIR Report, because this may indicate that the development process did not achieve the originally desired system functionality.

Effective project management and assessment relies in part on developing a balanced set of performance measures that are informative and complete. These performance measures can include metric generation and analysis, proper estimation and planning as evidenced by estimates versus actuals, stakeholder confirmation of adherence to requirements, and other technical performance indicators.

3) EA Compliance: System architecture needs to be carefully planned and designed to ensure that it will support the application and ensure that all interfaces, processes and system components are compliant with currently prescribed industry standards and the Department's EA. This includes compliance with the business, process, data, and strategic components of the EA. This process ensures that the technical architecture has a sound foundation that fully supports the Department's business functions. The original architecture plan should be compared against the implemented system in order to determine if there were deviations from the original requirements. A PIR assessment should also determine if all system components integrate with the current infrastructure.

4) Security: To conduct a security assessment, a document review and security analysis is performed to ensure that a complete security plan was developed, implemented and enforced. This review will ascertain if adequate security measures were devised and thoroughly tested to protect system data. In addition, documentation should be analyzed to determine whether the implemented system complies with the Department's security standards and procedures. Furthermore, if security problems are

identified during the assessment, corresponding corrective actions should be documented and immediately enacted.

A thorough security analysis should compare the system security measures against security testing results documentation. These security measures need to be reviewed against the Department's certification and accreditation (C&A) guidelines. The Department requires that all systems processing, transmitting or storing of DOE information regardless of classification or sensitivity must be certified and accredited. Based on that requirement each system should have supporting C&A documentation such as, but not limited to, the following: initial risk assessment; system security plan; configuration management plan; contingency plan; and results of previous assessments of existing operational systems (e.g., security testing and evaluation – also known as the security controls assessment, independent verification and validation, independent audits, etc.). The evaluation team should review any deviations from these security standards, as well as any documentation that provides an explanation for the change. Finally, the evaluation team should collect the results of system penetration testing which will identify potential system weaknesses that may exist.

5) Project Risk Management: Project risk is a set of factors, both internal and external, that can affect the successful planning, design, and implementation of an IT investment. Consideration of how the project team anticipated and identified risks, developed risk management strategies, and employed those strategies to address risk, can provide valuable insight to the PIR. Risk management analysis should be reviewed to determine if risks were encountered, and if so, whether they were managed effectively. The analysis should include the impact that the risks and their management had on the success of the investment.

6) Records Management: The Records Management Program provides the systematic control of the capture, storage, maintenance, retrieval and use, and disposition of records. From the federal perspective, it is the planning, controlling, directing, organizing, training, promoting, and other managerial activities involved in records creation, maintenance and use, and disposition in order to achieve adequate and proper documentation of the policies and transactions of the Federal Government and effective and economical management of agency operations.

Records management, as related to electronic information systems (EIS), is as complex as the information maintained in the EIS is fluid. During the development of the EIS, decisions concerning the records management aspects of the EIS must be made to facilitate the retention of the "records information" and any processes that store, retrieve and replace this information during its use. Additionally the necessary disposition approvals from the DOE Records Officer and the National Archives and Records Administration need to be requested and obtained prior to implementation. These features should be evaluated during the PIR and subsequent annual reviews.

Records management addresses the life cycle of records, i.e., the period of time that records are in the custody of Federal agencies. The life cycle usually consists of three stages:

- Creation or receipt
- Maintenance and use

- Disposition

It is important to ensure that all programs are complying with and meet all of the requirements associated with the Department's records management policies and procedures.

7) Impact on Goals and Strategic Objectives: Analysis is conducted to determine whether the investment met the stated outcomes and benefits and whether these outcomes continue to be in alignment with the Department's goals and objectives. Strategic performance analysis should be documented and include how well the investment is meeting departmental goals and the reasons why there may be departures from the overall strategy.

8) Impact on Stakeholders: Stakeholder perception and satisfaction must be assessed to determine the extent to which the investment is meeting stakeholder needs. Stakeholders include users, customers, and business process owners. The impact will be typically measured through user satisfaction surveys and interviews. The surveys should ask questions that will reveal the investment's ability to meet business process support demands.

9) Best Practices and Lessons Learned: Successful procedures or practices, as well as highlighted issues or problems that are uncovered during the PIR, should be recorded and captured as best practices and lessons learned. The lessons learned should be applied to make improvements to the CPIC process and future IT investments. Lessons learned is knowledge derived from experience to promote the recurrence of desirable outcomes or preclude the recurrence of undesirable outcomes. Use of lessons learned is a principle component of all levels of organizational culture committed to continuous process improvement. Lessons learned enable the knowledge gained from past experience to be applied to current and future investments to avoid the repetition of past failures and mishaps. Lessons learned documentation can represent both positive and negative experiences. The ability of the project manager to more effectively manage an investment is greatly increased through this resource. Further, a review of lessons learned from prior investments will help identify problems that may materialize during the investment. Analysis of these problems should lead to ways to avoid or mitigate them. Reviewing lessons learned helps in setting a realistic schedule, estimating accurate costs, identifying possible risks/mitigation strategies, and feeds the continuous improvement process.

5.3.3 Evaluation Process

As part of the PIR process, the appropriate template and scoring criteria will be provided to the programs so that they can implement the Department's approved process when conducting their PIRs. The programs will be required to complete the provided template along with the program's proposed assessment of the investment's performance. All programs will apply the same evaluation criteria when evaluating their investments to ensure consistent scoring across the Department.

The programs will be required to report the results of their PIR, including the completed template, to the IT Council by a specified deadline. The IT Council will review the reported results. Additionally information may be required from the Programs with

regard to the results of the PIR. The IT Council will provide any final recommendations to the OCIO and the OCIO will authorize any corrective actions. The Program may be required to report the status of their corrective actions at a follow-up meeting, as necessary.

In an effort to reduce the burden placed on project managers due to overlapping data calls, whenever possible, the data calls associated with the Evaluate Phase will be consolidated with other existing data calls. For example, all major investments are required to report on a quarterly basis as part of the Department's Control process. If possible, the data calls associated with the PIRs will be conducted in conjunction with the quarterly Control Reviews. Selected PIR candidates will be notified in advance that they are required to participate in a PIR. The evaluation process associated with a PIR is a generally more in-depth analysis of an individual investment; however the investment is evaluated on some of the same evaluation factors, as the Control Review requires. Therefore, any investment that is required to participate in a PIR would only be required to submit the PIR documentation as part of the Control Review process. The necessary data submitted as part of the PIR will be extracted to allow for a Control Review score to be ascertained. For example, there may be overlap between some the security and cost and schedule data that is required for both the Control Review and the PIR. The investment assessment will be presented during the Control Review meeting, so as to decrease the number of times the IT Council is required to meet. The IT Council will have the opportunity to make recommendations regarding the investment as well as recommendations for how to improve the overall evaluation process.

5.3.4 PIR Scoring Process

Investment scores will be determined based on assessment against investment-specific questions. Each question will be scored on a four-point scale:

- 4 Points – Excellent
- 3 Points - Good
- 2 Points – Satisfactory, but could use improvement
- 1 Point – Needs Significant Improvement
- 0 Point – No information provided

The total points earned and a percentage of total points earned will be calculated. Appendix C contains the listing of questions, sub-categories and scoring ranges that will be used by the PIR team in the review process. Scoring criteria have been developed for a score of 0, 2 and 4. A score of 1 and 3 has been left to the discretion of the reviewers. The investment will be scored and an overall investment score will be developed. The percentage of total points earned out of possible total points will be calculated. Based on the overall score, the following actions will apply:

- Any investment that receives a score of 80-100% will not require additional action.
- Any investment that receives a score of less than 80% will be required to submit a recovery plan to the IT Council that incorporates all required corrective action.
- Any investment that receives a score less than 60% will require follow-up meetings to monitor the recovery process.

Additional steps may be taken until the IT Council and OCIO are satisfied that the investment is taking the necessary steps to improve its performance. Following the PIR meeting, documentation of the meeting and a summary lessons learned package will be developed by the PIR Team. In addition, if specific actions for getting investments back on track are identified by the OCIO, guidance for taking these actions will also be prepared and provided to the programs. Best practices and lessons learned will be reported Department-wide to ensure that other investments may learn from the evaluated investment.

5.4 Identifying Lessons Learned

Using the collective results of annual CPIC evaluation assessments and PIRs, DOE is able to modify the organization's existing investment selection and control processes based on lessons learned. The information from PIRs helps management develop better decision-making criteria during the CPIC Selection phase and improve the management of ongoing projects during the CPIC Control and Evaluate phases.

Notions of “continuous improvement” and implementing “best practices” are not achievable unless effective feedback mechanisms are developed. The objective of any feedback system should be to link the findings back to the right people, at the right time and in the right format, for easy application to each new project. The implementation of the Evaluate Phase closes the loop with regard to the CPIC process by facilitating feedback on the Department’s overall CPIC processes and their refinement.

Given its flexibility and ability to identify areas of greatest potential gain, the PIR is arguably the single most cost effective tool available for improving project management. Whatever the improvements may be, one of the key benefits of conducting a PIR is to apply the lessons learned from existing IT projects to develop better processes for IT capital planning. The value of a PIR is diminished without systematic approach and techniques for correcting the process in response to lessons learned. Continued improvements to the process are obtained through various sources, including benchmarking against the GAO ITIM framework.

In addition to communicating the closure of a project in writing, it is also advisable to have a mechanism for group review. The GAO recommends, "There should be some mechanism or process to ensure that information is being aggregated and fed back in to improve the investment management process."[3] A “lessons learned” session is a valuable closure mechanism for project team members, regardless of the project’s success. Some typical questions to answer in such a session include:

- Did the delivered product meet the specified requirements and goals of the project?
- Was the user/client satisfied with the end product?
- Were cost budgets met?
- Was the schedule met?
- Were risks identified and mitigated?

[3] General Accounting Office, “Assessing Risks and Returns: A Guide for Evaluating Federal Agencies’ IT Investment Decision-making,” GAO/AIMD-10.1.13, v. 1.0, February 1997.

- What could be done to improve the process?

The PIR may yield lessons learned about the following:

- Project management process
- Systems development process
- Contracting methodology used
- Deficiencies/gaps in the current policy
- Training received and/or provided
- Conversion tasks from legacy systems to current architecture
- Software used
- Improvements in the competency and composition of the project team

For example, the cost, risk, and benefit criteria for the Select Phase may be refined to ensure greater success of future IT implementations. In the Control Phase, there may be more appropriate performance measures that could be established to improve the monitoring of the IT investments. In addition, future IT investments should be required to comply with the standards developed by the lessons learned. As such, this section will examine the operational aspects of applying the lessons learned and establishing a repository for access.

5.5 Evaluate and eCPIC

All report templates associated with this phase will be maintained within eCPIC. Since the evaluation factors associated with the Evaluate Phase will overlap with other phases of the CPIC process, namely the Control Phase, the maintenance of templates and information within eCPIC will allow project managers and the OCIO to access the related data in a single repository.

Appendix A. FEDERAL LEGISLATION, REQUIREMENTS, & GUIDANCE FOR IT INVESTMENT MANAGEMENT

The Department of Energy's CPIC process and IT Governance Program will comply with several pieces of IT management legislation and regulatory guidance, including:

Clinger-Cohen Act (CCA) of 1996: The CCA was formerly known as the Information Technology Management Reform Act or ITMRA. It requires each agency to undertake capital planning and investment control by establishing a process for maximizing the value and assessing and managing risks of IT acquisitions of the executive agency.

E-Government Act of 2002: The "E-Government Act of 2002" builds upon the Administration's expanding E-Government initiative by ensuring strong leadership of the information technology activities of Federal agencies, a comprehensive framework for information security standards and programs, and uniform safeguards to protect the confidentiality of information provided by the public for statistical purposes. The Act also assist in expanding the use of the Internet and computer resources in order to deliver Government services, consistent with the reform principles, outlined on July 10, 2002, for a citizen-centered, results-oriented, and market-based Government.

Federal Acquisition Streamlining Act (FASA) of 1994: FASA requires agencies to define the cost, schedule and performance goals for major acquisition programs and to monitor and report annually on the degree to which those goals are being met. Agencies must assess whether acquisition programs are achieving 90% of their cost, schedule and performance goals.

Federal Acquisition Reform Act (FARA of 1996): Requires the head of each executive agency, after consultation with the administrator for Federal Procurement Policy, to establish policies and procedures for the effective management (including accession, education, training, career development, and performance incentives) of the acquisition workforce of the agency.

Government Performance and Results Act (GPRA) of 1993: GPRA requires agencies to prepare updateable strategic plans and to prepare annual performance plans covering each program activity displayed in the budget. The performance plans are to establish performance goals in objective, quantifiable and measurable form and performance indicators to be used in measuring relevant outputs, service levels and outcomes.

Paperwork Reduction Act (PRA) of 1995: PRA intends to: minimize the paperwork burden resulting from collection of information by or for the Federal Government; coordinate, integrate and make uniform Federal information resources management policies and practices; improve the quality and use of Federal information to minimize the cost to the government of the creation, collection, maintenance, use, dissemination, and disposition of information; and ensure that information technology is acquired, used, and managed to improve efficiency and effectiveness of agency missions.

Chief Financial Officers' Act (CFOA) of 1990: CFOA establishes the foundation for effective financial management, including requiring agencies to develop and effectively operate and maintain financial management systems. The CFO Act focuses on the need to significantly improve the financial management and reporting practices of the

federal government. Having accurate financial data is critical to understanding the costs and assessing the returns on IT investments. Under the CFO Act, CFO's are responsible for developing and maintaining integrated accounting and financial management systems that include systematic measurement information on agency performance.

Capital Programming Guide (updated annually): The purpose of the Capital Programming Guide is to provide professionals in the Federal Government guidance for a disciplined capital programming process, as well as techniques for planning and budgeting, acquisition, and management and disposition of capital assets. At the same time, agencies are provided flexibility in how they implement the key principles and concepts discussed. The guidance integrates the various Administration and statutory asset management initiatives (including Government Performance and Results Act (Pub. L. No. 103–62), the Clinger-Cohen Act (Divisions D and E of Pub. L. No. 104–106, the Federal Acquisition Reform Act and the Information Technology Management Reform Act of 1996, as amended; popularly known as the Clinger-Cohen Act), Federal Acquisition Streamlining Act of 1994 (Pub. L. No. 103–355), and others) into a single, integrated capital programming process to ensure that capital assets successfully contribute to the achievement of agency strategic goals and objectives.

OMB Circular A-11, Part 2: Preparation and Submission of Strategic Plans: Circular A-11, Part 2, provides guidance for preparing and submitting overall agency strategic and performance plans required by GPRA. The Circular has three parts: Part 1, which covers preparation of the budget request and related materials; Part 2, which covers strategic plans, annual performance plans, and performance reports; and Part 3, which covers the acquisition of capital assets.

OMB Circular A-11, Part 3: Planning, Budgeting, and Acquisition of Fixed Assets: Circular A-11, Part 3 provides guidance on the planning, budgeting and acquisition of fixed assets, which include IT capital assets, and requires agencies to provide information on these assets in budget submissions, and provides guidance for planning. It also provides guidance for coordinating collection of agency information for OMB reports to Congress for FASA and the CCA. Under FASA, OMB is required to report on the cost, schedule and performance goals for asset acquisitions and how well agencies are meeting their goals. CCA requires that OMB report on program performance in information systems and how benefits relate to accomplishing the goals of the agency.

OMB Circular A-130: Management of Federal Information Resources: Circular A-130 provides information resource management policies on Federal Information Management / Information Technology (IM/IT) resources required by the PRA of 1980 as amended.

OMB Memorandum M-97-02: Funding Information System Investments: This memorandum contains eight decision criteria commonly referred to as Raines Rules, which OMB will use to evaluate major information system investments.

Executive Order 13011, Federal Information Technology: The executive order highlights the need for agencies to significantly improve the management of their information systems, including the acquisition of information technology, by implementing the relevant provisions of PRA, the Clinger-Cohen Act and GPRA. Agencies are to refocus their information technology management to directly support

their strategic missions, implement an investment review process that drives budget formulation and execution for information systems, and rethink and restructure the way they perform their functions before investing in information technology to support that work. Agency heads are to strengthen the quality and decisions of employing information resources to meet mission needs through integrated analysis, planning, budgeting, and evaluation processes.

Section 508 of the Americans with Disability Act (Section 508): In 1998, Congress amended the Rehabilitation Act to require Federal agencies to make their electronic and information technology accessible to people with disabilities. Inaccessible technology interferes with an individual's ability to obtain and use information quickly and easily. Section 508 was enacted to eliminate barriers in information technology, to make available new opportunities for people with disabilities, and to encourage development of technologies that will help achieve these goals. The law applies to all Federal agencies when they develop, procure, maintain, or use electronic and information technology. Under Section 508 (29 U.S.C. ' 794d), agencies must give disabled employees and members of the public access to information that is comparable to the access available to others.

Appendix B. DOE CONTROL REVIEW TEMPLATES AND SCORING CRITERIA

DOE Control Review Report Template

DOE Quarterly Control Review Report - FY 2009 Q4					
Investment Information					
1. Date of Quarterly Control Review Report:	**2. Investment's Name:**				
3. Investment's UPI Number:	4. Program Office:				
5. Investment Sponsor's Name:	6. Investment Sponsor's Phone Number:				
7. On what date did the investment start?	**8. As-of-Date to report status:**				
9. Type of Investment in CY 2009:	○ Development / Modernization / Enhancement (DME)	○ Steady State	○ Mixed Life Cycle		
a. Will you report project-level status in addition to investment-level status on this Control Review?				○ Yes	◉ No
b. Did the FY 2009 Continuing Resolution (CR) have an impact on the investment?				○ Yes	○ No
i. If yes, describe the impact on the investment.					
10. Did the investment submit a Get Well Plan with corrective actions during the last Control Review?				○ Yes	○ No
a. If yes, provide the status of the corrective actions from last quarter's Get Well Plan.					
Project Management Qualification					
11. Project Manager's Name					
12. At what level is the Project Manager qualified to manage investments?					
13. What is the level of the IT Project? (per CIO Council PM Guidance)					
14. In addition to the Project/Program Manager FAC-P/PM or DAWIA certification level, what project management qualifications does the Project Manager have? (per CIO Council PM Guidance)?					
a. If PM is qualified, when was the Project Manager certified?					
b. If PM is not qualified or no PM, submit a Get Well Plan.					
Risk Management					
15. Does this investment directly support one of the GAO High Risk Areas?				○ Yes	○ No
a. If yes, indicate which GAO High Risk Area.					
Risk Assessment Table					
16. Populate the following table from the investment's risk register with the current status (to the as-of-date) of the investment's top three (3) risks.					

Rank of Risk	Description of Risk	Impact should Risk Occur	Probability of Occurrence	Mitigation Actions	Planned Response should Risk Occur
1					
2					
3					

17. Does the investment have a Risk Management Plan?	○ Yes	○ No
a. If yes, what is the date of the Risk Management Plan?		
b. If yes, what has changed with the Risk Management Plan since the last quarterly Control Review?		
c. If no, indicate the planned completion date of the Risk Management Plan.		

Baseline Management

Current Summary of Spending	($ Thousands)	PY-1 and earlier	PY 2008	CY 2009	BY 2010
18. Restate the investment's current Summary of Spending from the final BY 2010 business case submitted to OMB.	Planning				
	Acquisition				
	Subtotal Planning & Acquisition (DME)	$0.000	$0.000	$0.000	$0.000
	Operations and Maintenance (Steady State)				
	FTE				
	Total	$0.000	$0.000	$0.000	$0.000

19. Has the investment re-baselined during the current fiscal year?	○ Yes	○ No
a. If yes, when did the DOE CIO, CFO, Procurement Authority, and OMB approve the re-baseline?		
i. Briefly describe the baseline changes for the re-baseline.		
20. Has the investment internally re-planned, or will the investment internally re-plan during the current fiscal year?	○ Yes	○ No
a. If yes, when did the internal re-plan finish, or when will the internal re-plan start?		
i. Briefly describe the plan changes for the internal re-plan. (Note: Update eCPIC with approved plan changes, and inform DOE's Office of the CIO)		

Development / Modernization / Enhancement (DME) Component

Critical Decisions

21. In accordance with Order 413, which Critical Decisions (CD) have been accomplished for this investment (i.e., CD-0, 1, 2, 3, or 4)?

Critical Decision		Approval Date	Approver	Remarks
	CD-0, Approve Mission Need			
	CD-1, Approve Alternative Selection and Cost			
	CD-2, Approve Performance Baseline			
	CD-3, Approve Start of Construction			
	CD-4, Approve Start of Operations or Project			

DME Milestones

22. For all DME milestones from the investment's OMB business case, enter up-to-date cost, schedule, and performance data into the table below. Provide data for FY 2009. Include government FTE/in-house development and implementation costs. The following table will be used to calculate cost and schedule variances for performance management data. If you will use this table to calculate variances for performance management data, then include historical milestones (e.g. FY 2008) to calculate cumulative variances.

		Current Baseline			Actual			
FTE or Contractor Costs Included	Milestone Description	Start Date	Completion Date	Total Cost ($ Thousands)	Start Date	Completion Date	Total Cost ($ Thousands) as of *Missing As-of-Date*	Percent Complete as of *Missing As-of-Date*
			Total	$0.000		Total	$0.000	

EVM or Performance Management Data

23. As all DME activities should report either EVM data or performance management data (i.e. from the investment's performance management system), what type of data will your investment report? ○ EVM Data ○ Performance Management Data

EVM Data

a. For the investment, enter historical and up-to-date EVM data into the table below. All amounts should include government FTE/in-house development and implementation costs.

(Enter amounts in $ Thousands)

	Month/Year	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	*Missing As-of-Date*
Actual Cost (AC) (ACWP)	Cumulative-to-Date						
Planned Value (PV) (BCWS)	Cumulative-to-Date						
Earned Value (EV) (BCWP)	Cumulative-to-Date						
Budget at Completion (BAC):							
Cost Variance (CV)		$0.000	$0.000	$0.000	$0.000	$0.000	$0.000
Cost Variance Percent (CV%)							
Schedule Variance (SV)		$0.000	$0.000	$0.000	$0.000	$0.000	$0.000
Schedule Variance Percent (SV%)							
Estimate at Completion (EAC) (BAC/CPI)							

Performance Management Data

b. Cost and schedule variances for performance management data are calculated from the DME Milestones table in the following table. Variance calculations assume linear time-phased budgets. If your investment tracks its own performance management data, replace the calculated values with the investment's data.

Cost Variance ($ Thousands)	$0.000
Cost Variance %	**Missing Data**
Schedule Variance ($ Thousands)	$0.000
Schedule Variance %	**Missing Data**

24. Do the EVM data or performance management data include FTE/in-house development and implementation costs? ○ Yes ○ No

25. Does the investment's Cost Variance % or Schedule Variance % exceed + or - 10%? ○ Yes ○ No

a. If yes, submit a Get Well Plan, but not for positive variances that are favorable due to project management efficiencies.

i. If your investment has a positive variance that is favorable due to project management efficiencies, describe how the favorable variance was achieved.

27. Indicate the date of the investment's Integrated Baseline Review (IBR).

EVM System (EVMS) or Performance Management System

28. Is the investment subject to EVMS requirements in the current year? ○ Yes ○ No

a. If no, briefly describe the alternative performance management system used or the compensating controls used to mitigate project risk.

i. Why is the investment not subject to EVMS requirements in the current year? ○ Firm Fixed Price (FFP) Contracting ○ Does not meet DME requirements

b. If yes, per Order 413, is the investment's EVMS required to be self-certified or OECM-certified as ANSI/EIA-748 Standard compliant? ○ Self-certified ○ OECM-certified

i. If self-certified, indicate the past or planned date of certification (Site or contractor EVMS certification does not necessarily indicate project EVMS certification).

ii. If OECM-certified, indicate the past or planned date of certification.

c. If yes, indicate the date of the most recent yearly surveillance.

Steady State / Operational Component

Steady State Milestones

29. For all steady state milestones (including operational from Mixed Life Cycle) from the investment's OMB business case, enter up-to-date cost, schedule, and performance data into the table below. Provide data for FY 2009. Include government FTE/in-house costs. The following table will be used to calculate cost and schedule variances for operational data. If you will use this table to calculate variances for performance management data, then include historical milestones (e.g. FY 2008) to calculate cumulative variances.

		Planned			Actual			
FTE or Contractor Costs Included	Milestone Description	Start Date	Completion Date	Total Cost ($ Thousands)	Start Date	Completion Date	Total Cost ($ Thousands) as of *Missing As-of-Date*	Percent Complete as of *Missing As-of-Date*
			Total	$0.000		Total	$0.000	

Operational Cost, Schedule, and Performance Data

30. What is the basis of your investment's operational data: performance management data (i.e. from your investment's performance management system) or EVM data? ○ Performance Management Data ○ EVM Data

a. Operational cost and schedule variances are calculcated from the Steady State Milestones table in the following table. Variance calculations assume linear time-phased budgets. If your investment tracks its own operational data, replace the calculated values with the investment's data.

Cost Variance ($ Thousands)	$0.000
Cost Variance %	**Missing Data**
Schedule Variance ($ Thousands)	$0.000
Schedule Variance %	**Missing Data**

31. Do the Steady State/Operational cost, schedule, and performance data include FTE/in-house costs? ○ Yes ○ No

32. Does the investment's Cost Variance % or Schedule Variance % exceed + or - 10%? ○ Yes ○ No

a. If yes, submit a Get Well Plan, but not for positive variances that are favorable due to project management efficiencies.

i. If your investment has a positive variance that is favorable due to project management efficiencies, describe how the favorable variance was achieved.

Performance Goals

33. Complete the table below by listing all of the FY 2009 performance goals from your investment's OMB business case. Provide FY09 Q3 actual results or status (e.g. 100% on track) for each goal.

Fiscal Year	Strategic Goal(s) Supported	Measurement Area	Measurement Category	Measurement Grouping	Measurement Indicator	Baseline	Target	Actual Results

34. Is the investment achieving 90% or more of all performance goals? ○ Yes ○ No

a. If no, submit a Get Well Plan.

Security

35. Provide the date of the most recent system's transition from the planning phase to the operational phase.

a. If a system is still in the planning phase, provide the date when this transition is expected to occur.

36. What changes, if any, occurred to the system(s) in planning or operational system(s) since last quarter's Control Review?

37. Have all existing mixed life cycle systems or operational systems been certified and accredited (C&A) within the last three (3) years? ○ Yes ○ No

a. If yes, indicate the date of the last certification and accreditation.

b. If no, submit a Get Well Plan.

38. Does this investment have an up-to-date security plan(s)? ○ Yes ○ No

a. If yes, indicate the date(s) when the security plan(s) was updated.

b. if no, submit a Get Well Plan.

Project Management Score

39. Project Manager's Score ○ Red ○ Yellow ○ Green

40. Additional Comments

41. Project Manager's Signature — Date of Project Manager's Signature

42. Program/Staff Office Signature — Date of Program/Staff Office Signature

DOE Control Review Get Well Plan

DOE Get Well Plan - FY 2008 Q4			
Investment:		**Date of Plan:**	

1. Project Management Qualification

Brief Description of the Issue:

Brief Description of the Get Well Plan strategy:

Task Number	Corrective Task	Point of Contact	Start Date	End Date	Comments
1.1					
1.2					
1.3					
1.4					
1.5					

Impacts to other Control Review Elements:

2. Cost Variance

Brief Description of the Issue:

Brief Description of the Get Well Plan strategy:

Task Number	Corrective Task	Point of Contact	Start Date	End Date	Comments
2.1					
2.2					
2.3					
2.4					
2.5					

Impacts to other Control Review Elements:

3. Schedule Variance

Brief Description of the Issue:

Brief Description of the Get Well Plan strategy:

Task Number	Corrective Task	Point of Contact	Start Date	End Date	Comments
3.1					
3.2					
3.3					
3.4					
3.5					

Impacts to other Control Review Elements:

4. Performance Goal Variance

Brief Description of the Issue:

Brief Description of the Get Well Plan strategy:

Task Number	Corrective Task	Point of Contact	Start Date	End Date	Comments
4.1					
4.2					
4.3					
4.4					
4.5					

Impacts to other Control Review Elements:

5. Security

Brief Description of the Issue:

Brief Description of the Get Well Plan strategy:

Task Number	Corrective Task	Point of Contact	Start Date	End Date	Comments
5.1					
5.2					
5.3					
5.4					
5.5					

Impacts to other Control Review Elements:

6. Earned Value Management

Brief Description of the Issue:

Brief Description of the Get Well Plan strategy:

Task Number	Corrective Task	Point of Contact	Start Date	End Date	Comments
6.1					
6.2					
6.3					
6.4					
6.5					

Impacts to other Control Review Elements:

DOE Control Review Results Certification Form

Overview

This form serves to certify the results of the quarterly Control Review. Once the IT Council reviews Control Review results, IT Council members are asked to certify or disagree with the results, and send responses to the OCIO.

DOE Major IT Investment
FY 2008 Q4 Control Review
Results Certification

As a member of the Department of Energy Information Technology Council (IT Council), I have participated in the FY 2008 Fourth Quarter Control Review of all major IT investments in the DOE portfolio and I agree with and support the investment scores as documented. In addition, I support all investment recommendations identified by the IT Council and approve of forwarding these recommendations to DOE senior management.

_____
IT Council Member Name (Printed)

_____
IT Council Member Name (Signed)

_____
DOE Organization Represented

_____
Date

DOE Control Review Scoring Criteria

Purpose:

This document defines the scoring criteria to be used by the Information Technology Council when conducting the Quarterly Control Reviews for all Major IT investments.

Overview of Control Review Scoring Process:

The Department of Energy Control Review process is designed to collect and evaluate performance for all major IT investments on a quarterly basis. Control Reviews assess an investment's ability to meet the cost, schedule, and performance baseline goals defined in its business case. Investments are also evaluated on the existence of an updated security plan and their security certification and accreditation status, as well as the qualification of the project manager at the level of the investment. The IT Council will assess and score investments based on how well they achieved their goals and satisfied both security and project management qualification requirements using a set of standardized scoring criteria.

Prior to the IT Council review, each Project Manager should use the same scoring criteria to assess the performance of their own investment. If the self-scoring results in a score of "yellow" or "red," the Project Manager will need to develop corrective actions to improve the performance, security or project management certification status of the investment. These corrective actions are to be documented in a Get Well Plan.

Scoring each section of the Control Review Report:

To score a Control Review Report, a "stoplight" rating scale will be utilized. Specifically, there are six areas in which investments will be evaluated. These control areas were selected because they are key criteria for the DOE E-Government Scorecard and the development of sound IT business cases. These areas include:

1. Project Management Qualification
2. Cost Variance
3. Schedule Variance
4. Performance Goal Variance
5. Security
6. Earned Value Management

The tables on the following pages provide the guidelines for the criteria. Where an investment falls within these guidelines will determine an investment's score of "red," "yellow," or "green" for each of the criteria:

1. Project Management Qualification			
Description	**Red**	**Yellow**	**Green**
Assessment of the investment's compliance with the DOE Project Manager Qualification requirements. Program Managers for major investments are required to be qualified at specific levels based on the level of the investment as determined by OCIO criteria.	Project Manager qualification section was not completed **or** Project Manager has not been identified for the investment **or** Project Manager has been identified, but is not qualified at the correct level, and is not currently scheduled to take any qualification courses.	Project Manager has been identified, and he/she is currently taking the required qualification courses.	Project Manager is qualified at the level of the investment.

2. Cost Variance			
Description	**Red**	**Yellow**	**Green**
Assessment of the investment's cost performance. Cost variances should not exceed -10% over-runs or +10%**(1)** under-runs for any investment. When an investment's cost variance exceeds this threshold, a corrective plan of action should be developed by the Project Manager, and submitted in the Quarterly Control Review.	Investment's cost information was not reported for the Quarterly Control Review **or** Investment's cost variance(s) exceed -10% over-run(s) or +10%**(1)** under-run(s), and corrective actions are not in place, or the corrective actions are deemed insufficient to correct the variance problems.	Investment's cost variance(s) exceed -10% over-run(s) or +10%**(1)** under-run(s), but sufficient corrective actions are in place to correct the variance problems.	Investment's cost variance(s) does not exceed -10% over-run(s) or +10%**(1)** under-run(s).

(1): Except for favorable positive variances due to project management efficiencies.

3. Schedule Variance			
Description	**Red**	**Yellow**	**Green**
Assessment of the investment's schedule performance. Schedule variances should not exceed -10% over-runs or +10%**(1)** under-runs for any investment. When an investment's schedule variance exceeds this threshold, a corrective plan of action should be developed by the project manager, and submitted in the Quarterly Control Review.	Investment's schedule information was not reported for the Quarterly Control Review **or** Investment's schedule variance(s) exceed -10% over-run(s) or +10%**(1)** under-run(s), and corrective actions are not in place, or the corrective actions are deemed insufficient to correct the variance problems.	Investment's schedule variance(s) exceed -10% over-run(s) or +10%**(1)** under-run(s), but sufficient corrective actions are in place to correct the variance problems.	Investment's schedule variance(s) does not exceed -10% over-run(s) or +10%**(1)** under-run(s).

(1): Except for favorable positive variances due to project management efficiencies.

4. Performance Goal Variance			
Description	**Red**	**Yellow**	**Green**
Assessment of the investment's ability to meet its performance goals. The performance variance should be less than 10% for any investment. When an investment's performance variance exceeds this threshold a corrective plan of action should be developed by the project manager, and submitted in the Quarterly Control Reviews.	Investment's performance information was not reported for the Quarterly Control Review **or** Investment is not meeting 90% of its Performance Goals, and corrective actions are not in place, or the corrective actions are deemed insufficient to correct the performance issues.	Investment is not meeting 90% of its Performance Goals, but sufficient corrective actions are in place to correct the performance issues.	Investment is meeting 90% or more of its Performance Goals.

5. Security			
Description	**Red**	**Yellow**	**Green**
Assessment of the security performance for the investment. This assessment is to determine if security is monitored and maintained throughout the life of an investment.	The Security section was not completed for the Quarterly Control Review **or** Investment has an IT system that has not been certified and accredited (C&A) within the last three (3) years and C&A is not scheduled for completion **or** Investment does not have an updated security plan and the security plan is not scheduled to be updated/completed.	Investment has an existing mixed life cycle system or operational system that has not been certified and accredited (C&A) within the last three (3) years, but C&A is scheduled for completion **or** Investment's security plan is not updated, but it is in the process of being completed and a completion date has been set.	Investment has all existing mixed life cycle systems and operational systems that have been certified and accredited (C&A) within the last three (3) years **and** Investment has an updated security plan **or** Investment is not operational so C&A is not required, but investment has an updated security plan.

6. Earned Value Management			
Description	**Red**	**Yellow**	**Green**
Assessment of the Earned Value Management (EVM) system and practices for the investment. This assessment is to determine whether EVM has been implemented for investments that require EVM.	Investment has had neither a successful independent nor self-assessment of the investment's EVMS to be ANSI/EIA-748 Standard compliant **or** Program is not reporting EVM data monthly into PARS.	Investment's EVMS has been successfully self-assessed by the Program Office and/or prime contractor to be ANSI/EIA-748 Standard compliant with a copy of the evaluation report provided to the OCIO **and** Investment has OCIO concurrence of the self-assessment evaluation report **and** Investment is reporting EVM data monthly into PARS.	Investment's EVMS has been successfully independently reviewed, validated or certified to ANSI/EIA-748 Standard compliant by OECM, OCIO, or an independent entity **and** a copy of the evaluation report has been provided to the OCIO and received OCIO concurrence of the evaluation report **and** Investment is reporting EVM data monthly into PARS.

Scoring the Investment:

Once a score has been assessed for each section of the Control Review Report, an overall aggregate score will be generated for the investment. The criteria for generating an overall score are described below:

To receive a **GREEN** score for the overall performance of the investment, the following conditions must apply:

1. All of the following criteria received a green score:
    - Project Management Qualification
    - Cost Variance
    - Schedule Variance
    - Performance Goal Variance
    - Security
    - Earned Value Management

To receive a **YELLOW** score for the overall performance of the investment, the following conditions must apply:

1. One or more of the following criteria received a yellow score, and none received a red score:
    - Project Management Qualification
    - Cost Variance
    - Schedule Variance
    - Performance Goal Variance
    - Security
    - Earned Value Management

To receive a **RED** Score for the overall performance of the investment, the following conditions must apply:

1. One or more of the following criteria received a red score:
    - Project Management Qualification
    - Cost Variance
    - Schedule Variance
    - Performance Goal Variance
    - Security
    - Earned Value Management

Appendix C: Post Implementation Review Evaluation Criteria

Question	*Evaluation Criteria*	*Scoring Criteria*
1. Was there a documented 'lessons learned' process and has it been incorporated to improve investment performance?	Best practices/lessons learned	0 – A lessons learned process is neither documented nor implemented and there is no clear evidence that actual lessons learned have been incorporated to improve investment performance.
		2 – A lessons learned process has been documented but there is little or no evidence that the process is implemented, or it is clearly evident that lessons learned have been considered and incorporated to improve investment performance but the protocol for incorporating lessons learned has not yet been documented or formalized.
		4 – A lessons learned process is documented the investment clearly demonstrates how lessons learned have been incorporated to improve investment performance.
2. Did the process require that detailed baselines be developed, including descriptions of the milestones, dates, and timeframes?	Best practices/lessons learned; Cost & schedule	0 - The baseline is non-existent/non-attainable or is poorly documented to the extent that it provides little or no value to the management of the investment or tracking investment progress.
		2 - The documented baseline lacks detail but illustrates that some investment planning has occurred. The baseline will provide some limited value in the management of the investment and tracking investment progress.
		4 - The baseline is well developed with clear descriptive milestones and viable planned costs and schedule.
3. Did the investment conduct assessments of customer satisfaction (end-users, business or program unit sponsor, etc.)? What were the results of the Customer Satisfaction assessment?	Best practices/lessons learned; Technical & operational performance	0– Customer satisfaction has not been assessed or customer satisfaction rating is less than 50%.
		2 – Assessments of some customer groups have been done and/or the customer satisfaction rating is less than 90%.
		4 – Assessments include input from all customer groups and the customer satisfaction rating is greater than 80%.
4. Did the investment include an assessment of compliance with DOE's Enterprise Architecture? If yes, did the investment include how it complied with the DOE EA?	Enterprise Architecture compliance	0 -The investment does not align with the DOE Enterprise Architecture and/or alignment is not adequately or clearly documented
		2 The investment remotely aligns to the DOE Enterprise Architecture and/or the documented alignment needs improvement
		4 - The investment clearly aligns with the DOE Enterprise Architecture, which is adequately documented.
5. Did the investment	Best	0 – Investment does not have an IPT.

Question	*Evaluation Criteria*	*Scoring Criteria*
have and actively use an Integrated Project Team?	practices/lessons learned	2 – Investment utilizes an IPT, but not to the extent, it should. Roles and responsibilities are loosely defined or are not documented at all.
		4 – Investment has and fully utilizes its IPT. Roles and responsibilities are clearly defined and each IPT member is aware of and performs his or her duties as expected.
6. Did the investment collect projected versus actual cost, benefit, and risk data?	Technical & operational performance; Cost & schedule; Risk Management	0 - Actual data is not regularly collected and no analyses have been conducted to determine investment progress against the baseline/projected data.
		2 - Some actual data is collected, but collection is inconsistent and/or there are gaps in the actual data.
		4 - Actual cost, benefit, and risk data is documented and tracked against projected data.
7. Has the cost, benefit, and risk information that was used for initial investment justification been preserved? Have updates that have been made to costs, benefits, or risks been noted, preserved, and analyzed?	Technical & operational performance; Cost & schedule; Risk Management	0 - Little or no original investment justification data is available.
		2 - Original investment data are only partially available and/or changes to the data are poorly documented.
		4 - All original investment data used for initial justification has been maintained and was readily available. Any changes to the original data has been noted, preserved, and analyzed.
8. Is Cost and Schedule Variance data available for the investment?	Technical & operational performance; Cost & schedule	0 - No CV and/or SV data available, the investment was implemented with a schedule variance greater than +/- 10%, or the investment was implemented with a cost variance greater than +/- 10%
		2 - Limited CV and/or SV data available, the investment schedule variance at implementation was between +/-10% and +/-10%, or the investment cost variance at implementation was between +/-10% and +/-10%
		4 - Comprehensive CV and SV data available, the investment was implemented with a schedule variance less than +/-10%, and the investment was implemented with a cost variance less than +/-7%
9. Have investment benefits that were obtained been quantified? If not, were qualitative measures being used to determine impact?	Technical & operational performance	0 - Few or no quantifiable or qualitative measures have been documented.
		2 - Benefits have only been partially quantified and/or qualitative measures need some improvement to adequately determine the impact of the investment.
		4 - Investment benefits have been quantified and/or qualitative measures are being adequately used to determine the impact of the investment.
10. Was an economic analysis conducted? If yes, was the analysis results - NPV,	Cost & schedule	0 - An economic analysis was not conducted, calculations were conducted but are clearly flawed, and/or the investment data that is needed to perform calculations was not readily available

Question	*Evaluation Criteria*	*Scoring Criteria*
Payback Period, and ROI provided. If not, was it stated why?		2 - Some calculations were conducted, calculations were conducted but assumptions were not well documented, or adequate investment data was documented and available that allowed reviewers to easily make the necessary calculations
		4 - A thorough economic analysis was conducted and assumptions documented; Net Present Value, investment payback period, and Return on Investment were calculated and readily available
11. Was security funding identified for the investment as well as specific security related activities that the funding will be used for?	Cost & schedule; Security; Risk Management	0 – No discrete tasks that the funding will be used for have not been identified.
		2 – Security funding and activities have been identified, but level of effort does not align with the funding amount and/or the tasks specified are not identifiable in the overall investment plan.
		4 – Both funding and related activities have been identified and there is clear alignment between the two. The security related activities are also integrated and overtly present throughout the overall investment plan/schedule.
12. Did the investment identify security-related risks, and protect privacy data?	Security; Risk Management	0 - Security risks and/or mitigation strategies are poorly or not documented at all and/or privacy data is not adequately protected in accordance with the Privacy Act.
		2 - Security risks and/or mitigation strategies are only partially documented. Privacy data is adequately protected.
		4 - Security related risks are clearly documented in a Risk Assessment. Mitigation strategies are provided in an up-to-date system security plan that was written in accordance with NIST guidelines. Privacy data is protected in accordance with the Privacy Act.
13. Did the investment assess and monitor contractor performance, and maintain oversight data?	Best practices/lessons learned; Technical & operational performance	0 - Contractor performance is not regularly assessed and/or the results of assessments are not documented, maintained, or reviewed as part of subsequent assessments.
		2 – Contractor performance is assessed, but a formal assessment process has not been documented or implemented. Assessment results are documented and maintained, but no actions are taken to improve performance deficiencies.
		4 – A regular assessment process is documented and has been implemented. Results are documented, maintained, and periodically reviewed with the contractor to help ensure that performance deficiencies are corrected in a timely manner.
14. Did the investment support GPEA?	Best practices/lessons learned; Strategic goals	0 – This investment does not support GPEA
		2 – Investment indicates that it supports automating paper-based transactions but is not included in DOE GPEA Compliance Plan

Question	*Evaluation Criteria*	*Scoring Criteria*
	and objectives	4 – The investment supports electronic transactions/record-keeping currently identified in DOE's GPEA Compliance Plan AND describes how the investment relates to the plan.
15. Did the investment achieved its performance goals (intended impact), and was this impact still aligned with mission goals?	Technical & operational performance	0 - Few or no performance goals have been met and there is little or no alignment between the performance goals and DOE's mission goals.
		2 - The investment has met some of its performance goals and/or has poor documentation of the goals being met; Performance goals have been met, but do not closely align with DOE mission goals.
		4 - Yes the investment has adequate documentation that illustrates that all of its performance goals have been achieved and that those goals align with DOE's mission goals.
16. Are the business assumptions that justified the investment still valid?	Strategic goals and objectives	0 – Business assumptions have not been documented, are not readily available, or are invalid and/or the investment does not illustrate clear alignment with one or more of DOE's business processes
		2 – Some assumptions are still valid and the investment demonstrates how it fulfills a DOE business need or directly supports a DOE business process
		4 – Investment's original business assumptions are clearly documented and remain valid, and the investment clearly aligns with one or more DOE business process/fulfills a DOE business need
17. Were corrective actions for investments not meeting performance goals, outlined by the investment management team? Were timetables and steps for implementing these corrective actions established as part of the decision?	Best practices/lessons learned; Technical & operational performance; Cost & schedule	0 – Corrective actions were not documented.
		2 – Corrective actions were considered, but the course of action was not documented.
		4 – Corrective actions were considered and documented, including a timetable for completing those actions.
18. Did the investment directly support DOE's mission, and strategic goals and objectives?	Strategic goals and objectives	0– Investment does not state that it supports any of DOE's strategic goals/objectives.
		2 – Investment directly supports at least one of DOE's strategic objectives, but does not describe clearly how results or impacts will contribute to strategic goals or objectives.
		4 – Investment directly supports at least one of DOE's strategic objectives, and clearly describes how results or impact will contribute to DOE's strategic goals or objectives.

Question	*Evaluation Criteria*	*Scoring Criteria*
19. Did the investment support one or more of DOE's business processes?	Enterprise Architecture compliance; Impact on stakeholders	0 – Investment does not support any business process.
		2 – Investment members were able to demonstrate alignment during the PIR, but it is not documented.
		4 – Investment is aligned with at least one DOE business process, and has supporting documentation.
20. Did the investment regularly evaluate and document the 'current status of the investment'? (Assess the investment's impact on mission performance, and determine future prospects/changes for the investment.)	Best practices/lessons learned; Technical & operational performance; Cost & schedule; Impact on stakeholders	0 – Investment does not provide any status report data.
		2 – Investment regularly evaluates and monitors investment status but is not documented
		4 – Investment regularly evaluates and monitors investment status, and has supporting documentation.
21. Have Records Disposition Schedules been approved for the information in this investment	Records Management	0- SF-115 not submitted
		2- SF-115 submitted, but not approved
		4 – SF-115 has been approved
22. Are Data backup processes adequate for the significance of the information?	Records Management	0 - Backups are not conducted daily when data entry has occurred. No restoration test
		2- Only daily backups have been conducted,
		4 - Daily and Weekly backups are routinely performed and backup test has been completed within 1 year.
23. Has Data been protected to prevent unauthorized alterations and documents a record of changes to the data? (date, who, what).	Records Management	0 - Data is on LAN without protection
		2 - Data is maintained on a stand-alone server or system that is protected adequately.
		4 - Data is maintained on LAN with password protection.
25. Was this investment replaced by an E-Gov initiative?	Enterprise Architecture Compliance; Impact on Stakeholders	0 – No information is provided or an assessment has not been performed
		2 – This investment will be replaced by an E-Gov initiative, however a transition plan is not in place
		4 – This investment does not duplicate an E-Gov initiative or it will be replaced by an E-Gov initiative and a transition plan is in place.

Appendix D: Operational Analysis Guidance

Introduction

The Department of Energy's (DOE) implementation of the Office of Management and Budget's (OMB) requirement for conducting Operational Analyses reflects a comprehensive and coherent method of examining the current and historical performance of all operational (or steady-state) investments and measures that perform against established cost, schedule, and technical baselines. The Department of Energy's steady-state investments or mixed life-cycle investments with steady state components should complete Operational Analyses on the operational components of investments.

Operational Analysis Overview

An Operational Analysis is less structured than performance reporting methods applied to developmental projects (such as Earned Value Analysis). It is broader in nature and will trigger considerations of how the business objectives could be better met, how costs could be saved, and whether the organization should continue funding the investment as it is presently defined and operated. DOE's Operational Analysis framework demonstrates that investment sponsors and stakeholders are engaged in a continuous monitoring process to examine the historical and current performance being achieved, the suitability of continuing the investment, and the investigation of alternative methods of achieving the same investment results.

DOE's approach leverages and fosters integration of data from its Enterprise Architecture (EA) and Capital Planning Investment Control (CPIC) processes. The DOE Operational Analysis process involves the use of data from the following EA and CPIC domains: 1) end user/customer surveys; (2) results from investment reviews; 3) actual cost, schedule, risk, and performance data that is documented by the investment's (government and contractor) project, business, and contract managers; 4) benefit accumulation (as projected in the investment's analysis of alternatives); and 5) feedback and recommendations from an enterprise architecture perspective.

DOE requires all steady state investments and investments with operational components to provide their Operational Analysis to the OCIO in conjunction with their program portfolios. This allows program offices to evaluate the actual performance of their major steady-state investments and to identify funding requirements, based on the actual performance of the investments. Program Offices are to use DOE's Operational Analysis report template to document the results of their Operational Analyses.

Based on OMB's guidance on how to conduct an Operational Analysis as found in the Capital Programming Guide, an Operational Analysis must also answer more subjective questions in specific areas such as:

- Financial Performance,
- Customer Results,
- Strategic and Business Results, and
- Innovation

Financial Performance of a steady state investment is typically assessed using quantitative measures and is subjected to a periodic review for reasonableness and cost efficiency. To ensure that the products and services delivered to customers reflect full value for the resources expended, the investment's schedule and risk management plan/records, and the agency's financial records must provide sufficiently detailed data. This includes operating within an acceptable range of cost performance measures and conducting a periodic review to determine if the investment's performance is cost effective during the period of operation.

- Is the investment meeting its projected cost goals?

Customer Results analysis should focus on whether the investment is fully meeting the customer's performance needs and whether the costs associated with providing the service at that performance level are as low, to the customer, as they could be. The focus here is on whether the investment is delivering the goods or services that it is intended to deliver to the satisfaction of the customer.

- Are customers' needs and expectations being met?

Strategic and Business Results provide a measure of how well the investment is performing and meeting the business needs, in terms of its alignment with the enterprise architecture, and whether it is contributing to the achievement of the organization's current strategic goals. In this category of analysis, the Operational Analysis should provide data that answers questions such as:

- How does this investment help DOE complete its mission?
- What types of business and performance results are achieved as a result of the investment?
- How is the investment aligned with and supporting the enterprise architecture?
- What strategic goals does this investment address and how does it help DOE achieve them?

Addressing **Innovation** in the Operational Analysis is an opportunity to demonstrate that the investment managers are monitoring the current state of and availability in the market place of cost saving and performance enhancing technologies and are communicating with investment stakeholders (customers) to address questions such as:

- How could we better meet the customer needs?
- How could this investment be combined with others to better meet DOE's strategic goals?
- Are there new technologies or alternatives that could provide enhanced functionality at a lower cost?
- Could the functions be performed better or cheaper through partnerships with other DOE offices, other agencies and/or the private sector?

Guidelines for Conducting an Operational Analysis

The following are some guidelines for conducting an Operational Analysis. They can be considered as a "checklist" of items that should be included or considered when conducting the analysis.

- Conduct an Operational Analysis on an annual basis to support IT portfolio development. Because the Operational Analysis examines actual performance compared to projections, it provides valuable insights on determining whether an investment is having the intended impact and whether it should be included in the budget.

- Describe the baseline against which you measured the investment's performance. Have the original projected benefits been achieved and/or continuing to be realized? It is important to assess and discuss the continued need for the investment, along with performance metrics for measuring its performance. The performance metrics should have a clear relationship to both the investment's business need and DOE's strategic direction.

- Describe the investment's cost, schedule, and performance baseline, and describe the management techniques you are using to monitor metrics against the baseline (monthly status review meetings, budget reviews, etc). Also describe the quantitative metrics you are using to measure variances from the baseline, and the frequency with which you apply these measurements. It could be helpful to describe any tools you are using to track performance metrics (Microsoft Project, Excel spreadsheets, etc.).

- Ensure the continued strategic fit of the investment with DOE's strategic direction.

- Discuss the current performance of the investment. Is performance within limits of variance? If not, what corrective actions are you taking to return the variances to acceptable levels? Has upper management concurred with the planned corrective actions? How could additional funding be used to close any identified gaps and/or achieve improved results?

- Discuss any effort required to support the Department's target Enterprise Architecture.

Operational Analysis Template

DOE Operational Analysis Report - FY 2009	
Investment Information	
Investment Name:	
Program Office:	
Date of Report:	
On what date did the investment start?	
Projected End-of-Life Date:	
Describe the investment's performance management system that is used to report cost, schedule, and performance data for the Operational Analysis.	
1) Financial Performance	
1.1. Did the investment's operational Cost Variance % or Schedule Variance % exceed + or - 10%?	
a. If yes, explain the excessive variance(s), and the corrective actions with results, if applicable.	
1.2. Are annual operating and maintenance costs comparable to the estimates developed during the Planning phase?	
a. If no, explain the difference.	
1.3. Were operational costs as low as they could be for the actual results delivered?	
a. If no, explain why costs were higher and how costs could have been lower.	
1.4. Are there more cost effective or more efficient ways to deliver the planned scope (i.e. functionality) of the investment?	
a. If yes, explain how and when the program intends to pursue the more cost effective or more efficient ways.	
1.5. From the investment's Alternatives Analysis, have the quantitative benefits been realized over the past year?	
a. If no, explain the difference, and if and when you plan to realize the benefits.	

2) Customer Results	
2.1. Summarize the results of the investment's performance goals over the past year.	
2.2. What significant deliverables or activities were accomplished over the past year.	
2.3. Is the investment continuing to meet customer expectations and stakeholder needs for functionality and performance?	
a. If yes, describe how expectations and needs were met. If no, describe how the investment plans to meet customer expectations and stakeholder needs.	
3) Strategic and Business Results	
3.1. Explain how the investment aligns with the Department's strategy and the administration's plan for Energy, and how the investment remains a priority for the Department.	
3.2. Does the investment continue to meet business needs?	
a. If yes, explain how. If no, explain how the investment plans to meet business needs.	
3.3. Is the investment using a sustainable design with sustainable technologies (e.g. energy-efficient/green information technologies)?	
a. Explain your answer (Yes, No, N/A) for the investment's sustainable design.	

4) Innovation		
4.1. What significant milestones or deliverables are planned for the next year?		
4.2. Is future development, modernization, or enhancement (DME), such as technical refreshment, planned for the investment?		
a. If no, explain why not. If yes, describe the DME activities and when they will occur.		
4.3. Are there new technologies or alternatives that could improve functionality and/or performance at the same or lower costs?		
a. If no, explain why there are no alternatives. If yes, explain your plan to use the new technology or alternative and how and investment will be impacted.		
4.4. Could the investment's functions be performed better or cheaper through partnerships with other DOE offices, other agencies and/or the private sector?		
a. If no, explain why not. If yes, explain your plan to use the partnership(s) and how the investment will be impacted.		
4.5. Can this investment or components of the investment be eliminated or consolidated with other investments?		
a. If no, explain why not. If yes, explain how and when this elimination or consolidation with other investments will occur.		
4.6. Based upon the projected end-of-life date, what is the plan for the disposition of the investment's assets.	Projected End-of-Life Date:	Missing Date

Appendix E: Sample Select Criteria

The following table provides a list of sample value and risk selection criteria that can be used by program and staff offices to prioritize their IT investments as part of the IT portfolio development process.

VALUE CRITERIA	0	1	2
Mandatory Requirement	Initiative is not mandatory	Initiative strongly suggested in law, regulation	Initiative specifically required by law, regulation
Alignment to Mission, Goals, and Objectives	The initiative does not map to any mission, goal, or objective -OR- The initiative supports the Department's (or sub-organization) mission, goals, and objectives but no documentation exists that clearly demonstrates the strategic alignment	Explicit documentation clearly maps the initiative to missions, goals, and objectives identified in the DOE Strategic Plan, the DOE IRM Strategic Plan, and sub-organization documents (if applicable)	Explicit documentation clearly maps the initiative to missions, goals, and objectives identified in the DOE Strategic Plan, the DOE IRM Strategic Plan, and sub-organization documents (if applicable) -AND- Accomplishment of Departmental (or sub-organization) mission, goals, and objectives is highly dependent on the initiative
Process Improvement	The initiative does/will not assist or generate process improvements	The initiative does/will assist or generate a process improvement within a Program or Field Office only	The initiative does/will assist or generate a process improvement within the entire Department
Consequences of Not Doing the Initiative	Business can continue and goals met without doing anything -OR- For on-going initiatives: If the initiative were discontinued, no adverse impacts would occur	Business processes can continue but may not be able to meet performance goals -AND- No viable alternatives exist that can achieve the same results for less risk or cost	Current business operations cannot continue unless this initiative is undertaken -AND- No viable alternatives exist that can achieve the same results for less risk or cost -AND- Delaying the initiative will result in significantly higher costs in the future
Impact on Internal and/or External Customers	The initiative has/will not significantly improve services to internal and/or external customers	The initiative has/will significantly improve services to internal and/or external customers and is clearly documented	The initiative has/will significantly improve services to internal and/or external customers and is clearly documented -AND- Failure to fulfill the customer's requirements will result in multiple adverse impacts for the customer
Scope of Beneficiaries	The initiative does/will support a single DOE function and/or organization	The initiative does/will support multiple DOE functions and/or organizations	The initiative does/will support multiple government agencies or Departments

VALUE CRITERIA	0	1	2
Payback Period	Investment will not be recovered within the economic life span of the project	Investment will be recovered within the first half of the economic life span of the project	Investment will be recovered within the first quarter of the economic life span of the project

RISK CRITERIA	0	1	2
History of Success	Developer has failed to deliver a major initiative in past 3 years -OR- Development responsibilities are unclear	Developer has not failed to deliver a major initiative in the past 3 years -AND- Development responsibilities are clear	Developer has no history of failures, delays, or quality problems in past 3 years -AND- Development responsibilities are clear and documented
Alignment with EA and Standards	The initiative is not compatible with architecture principles, practices, and procedures -OR- The initiative's compatibility has not been addressed	The initiative is consistent with EA principles, practices, and procedures -AND- The initiative is consistent with information, applications, data, and technology baselines -AND- The initiative uses standard software and hardware	The initiative is consistent with EA principles, practices, and procedures -AND- The initiative is consistent with information, applications, data, and technology baselines -AND- The initiative uses standard software and hardware -AND- Configuration management and change control procedures have been addressed and are documented -AND- The initiative incorporates the following attributes to the greatest degree possible: scalability, portability, adaptability, accessibility, and vertical utility
Initiative Ownership and Endorsement	Roles and responsibilities for initiative design, development, and deployment have not been documented -OR- Initiative ownership is unclear -OR- User Community input has not been collected or documented	Roles and responsibilities for initiative design, development, and deployment have been documented -AND- The overall initiative "owner" is the Functional Lead -AND- User Community endorsement	Roles and responsibilities for initiative design, development, and deployment have been documented -AND- The overall initiative "owner" is the Functional Lead -AND- The User Community has been surveyed and endorses the initiative

RISK CRITERIA	0	1	2
		is expected but not yet documented	
Security	Access controls are not adequate or there are no redundant edits or audit trails to protect against corruption or transactions. If important decisions are being made from the data, procedures for validating the data may not be fully adequate. The initiative is sensitive and accessible via the Internet and to vendors or customers outside DOE	Adequate security measures have been/will be designed into the initiative to restrict access to sensitive data. Important decisions are made from this initiative but there are adequate procedures to validate results. The initiative is sensitive but is accessible only to internal DOE customers -OR- The initiative is not sensitive, important decisions will not be made based on its information, it is not accessible via the Internet to customers outside DOE, and adequate security measures are in place	Adequate security measures are in place or being developed to restrict access to sensitive information or functions; there are redundant edits and/or audit trail mechanisms to protect against corruption of transactions prior to receipt; results are validated before the decisions are made -OR- The initiative is not sensitive, important decisions will not be made based on its information, it is not accessible via the Internet to customers outside DOE, and adequate security measures are in place
Schedule Risk	Factors on the initiative's critical path may impact this year's schedule by 30% or more -OR- The initiative's impact depends significantly on another initiative still needing completion	Factors on the initiative's critical path may impact this year's schedule by no more than 10% -OR- The initiative's impact depends on another initiative still needing completion -AND- Risk mitigation actions have been identified	For the next year, there are no predicted or foreseen adverse impacts on the initiative's schedule -AND- There are no major interfaces with other initiatives or systems

RISK CRITERIA	0	1	2
Cost Sensitivity	The cost estimate is highly dependent upon uncontrolled variables (e.g., availability of external funding sources, changes in component pricing or maintenance contracts) and is therefore subject to significant change (>10%)	Situations may arise that may cause this year's costs to vary by no more than 10% of estimates	Measures to identify in a timely manner and reduce variances between the actual cost of work performed and the budgeted cost of work performed are clearly documented -AND- Cost estimates are not significantly dependent upon identifiable uncontrolled variables
Performance Measures	Specific performance measures for supported functions are unknown or not formally documented -OR- Performance targets for the initiative are not documented	Specific performance measures for some supported functions are formally documented -AND- Specific performance targets for the initiative are defined in terms of supported functions measures	Specific performance measures for all supported functions are formally documented -AND- Specific performance targets for the initiative are defined in terms of supported functions measures